CCA GCA ACC AAT GAT GCC CGT T-TAMRA-3'
CA GCA ACC AAT GAT GCC CGT T-TAMRA-3'

CCA GCA AGC ACT GAT GCC TGT T-TAMRA-3'
CA GCA AGC ACT GAT GCC TGT T-TAMRA-3'

Fig. 1A

Fluorescent Dyes

	Absorbance Maxima	Emission Maxima
Fluorescein	494nm	525nm
Tetrachloro fluorescein	521nm	536nm
TAMRA	565nm	580nm

Fig. 1B

Cleaved Fragments:

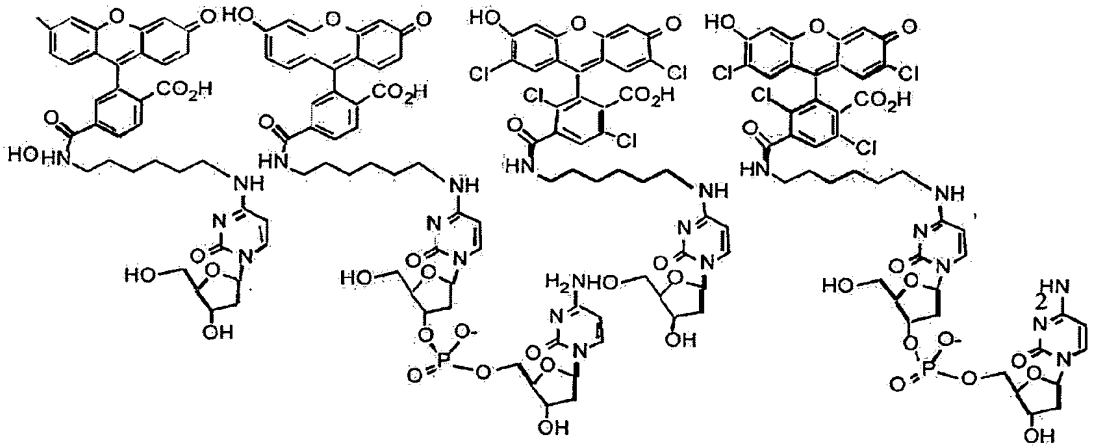


Fig. 1C

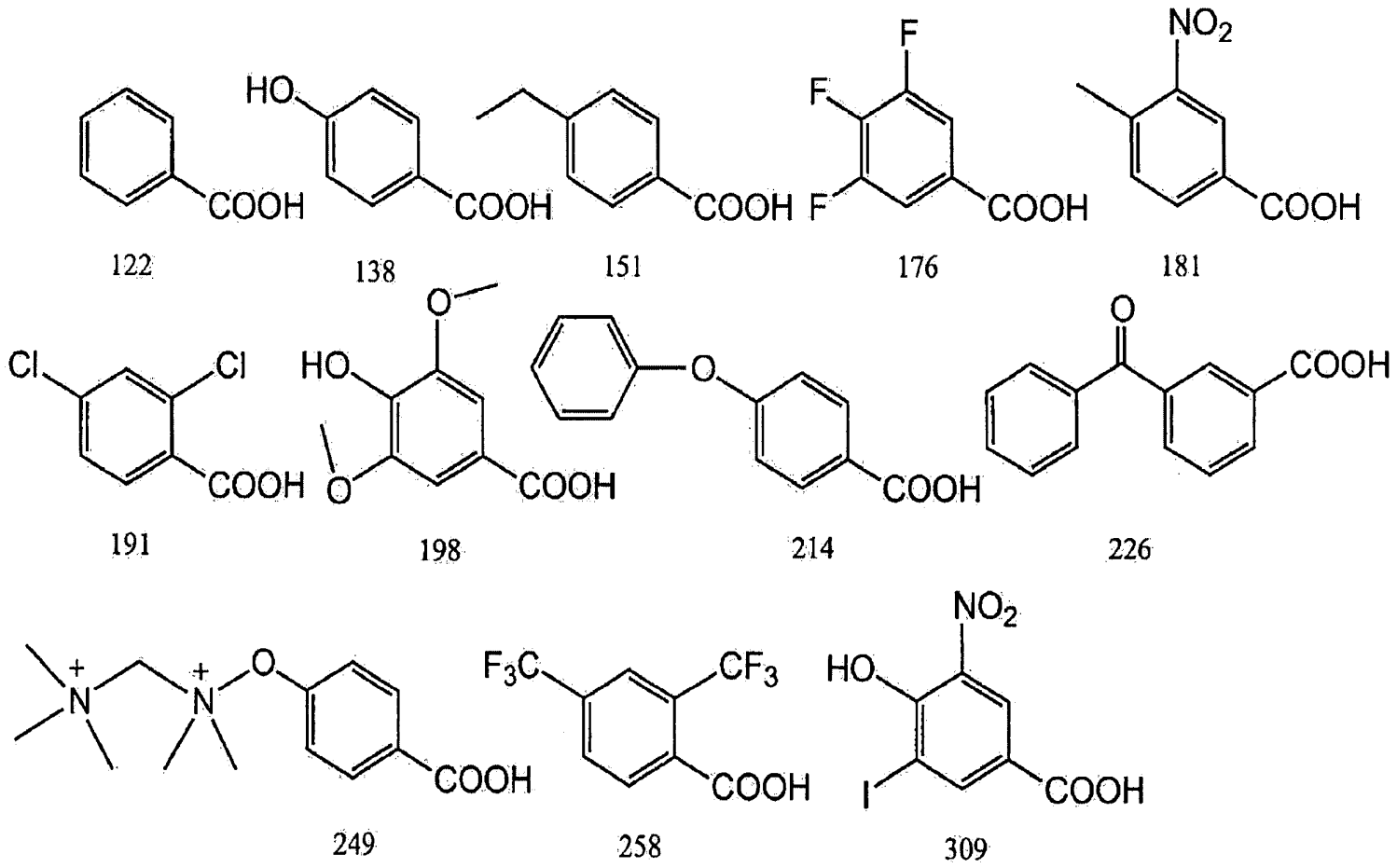

COOH
HO
F
NO2
Cl
O
122
138
151
176
181
191
198
214
226
N
+
F3C
CF3
I
249
258
309

Fig. 2

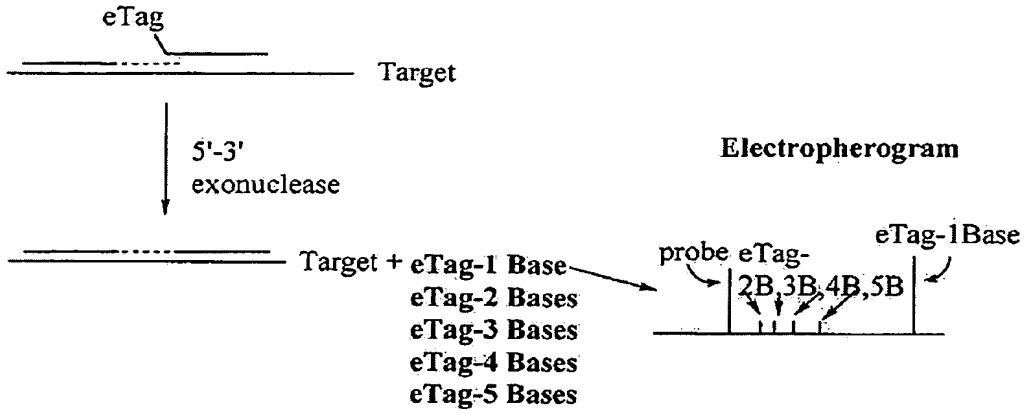

eTag
Target
5'-3'
exonuclease
Target + eTag-1 Base
eTag-2 Bases
eTag-3 Bases
eTag-4 Bases
eTag-5 Bases
Electropherogram
probe eTag-
2B,3B,4B,5B
eTag-1Base

Fig. 3A

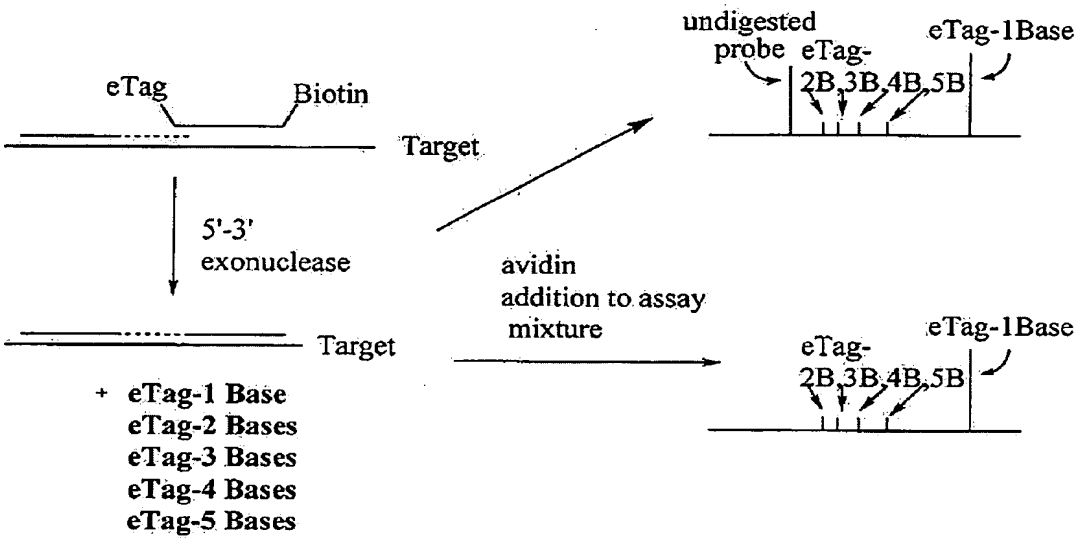

eTag
Biotin
Target
5'-3'
exonuclease
Target
+ eTag-1 Base
eTag-2 Bases
eTag-3 Bases
eTag-4 Bases
eTag-5 Bases
avidin
addition to assay
mixture
undigested
probe eTag-
2B,3B,4B,5B
eTag-1Base
eTag-
2B,3B,4B,5B
eTag-1Base

Fig. 3B

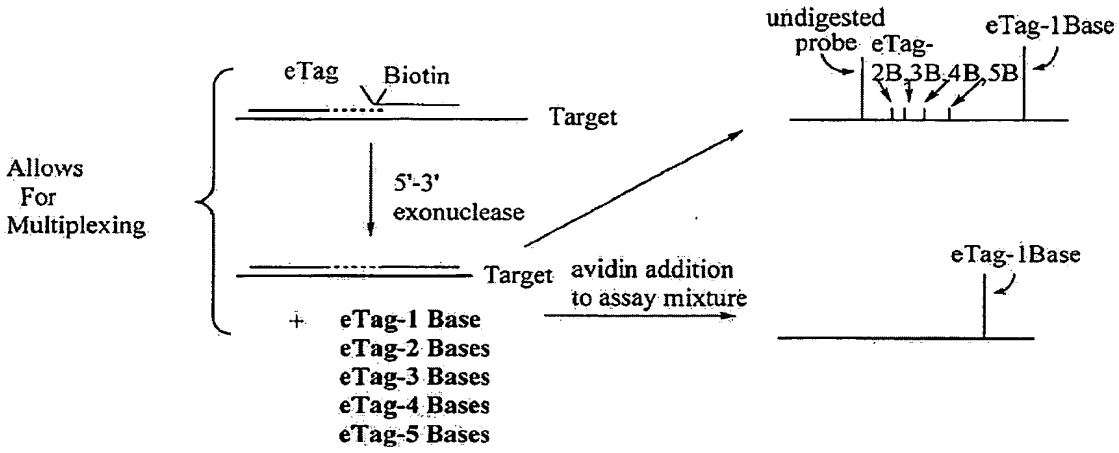

Allows
For
Multiplexing
eTag
Biotin
Target
5'-3'
exonuclease
Target
avidin addition
to assay mixture
+ eTag-1 Base
eTag-2 Bases
eTag-3 Bases
eTag-4 Bases
eTag-5 Bases
undigested
probe
eTag-
2B 3B 4B 5B
eTag-1Base
eTag-1Base

Fig. 3C

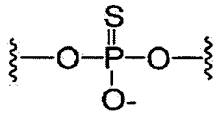

S
O
P
O
O-

Fig. 3D

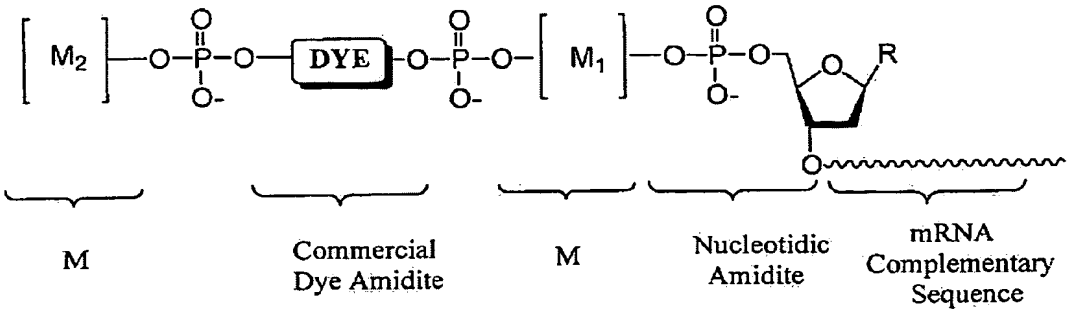

M2
DYE
M1
R
M
Commercial Dye Amidite
M
Nucleotidic Amidite
mRNA Complementary Sequence

Fig. 4

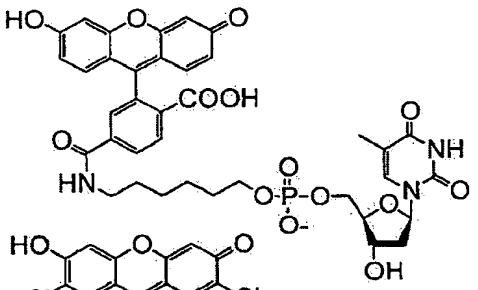
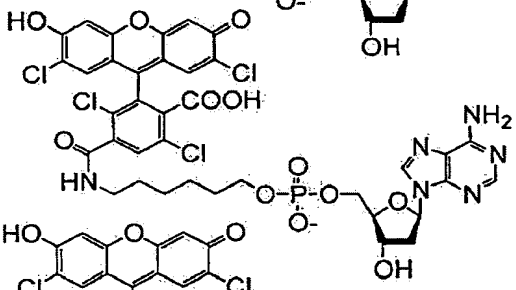
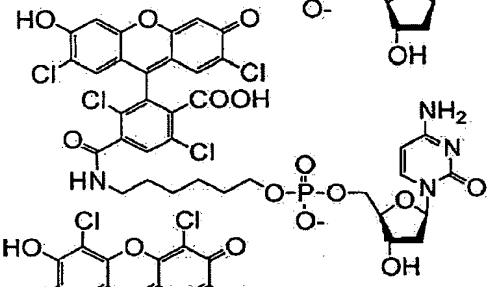
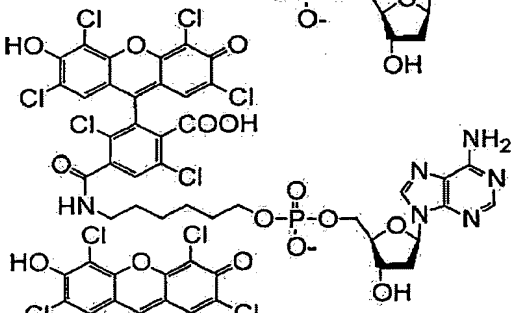
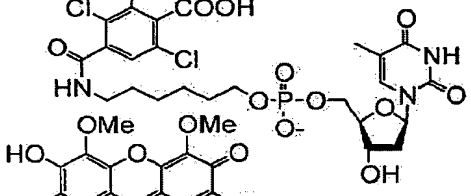
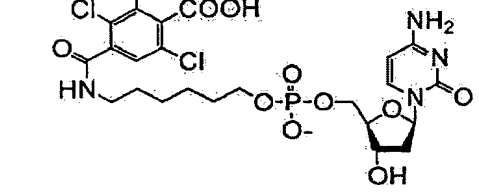
e-tag Reporter	Elution Time on CE, min	Mass
	6.4	778
	7.1	925
	7.3	901
	7.7	994
	8.0	985
	9.25	961

Fig. 5

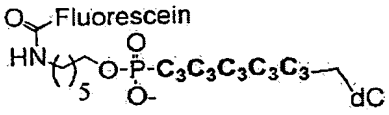
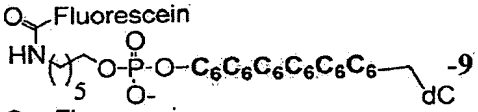
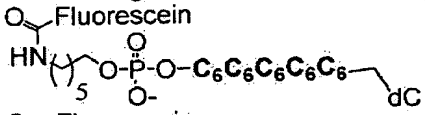
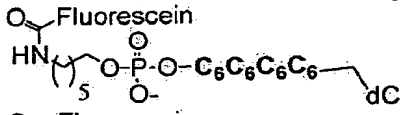
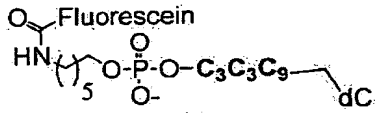
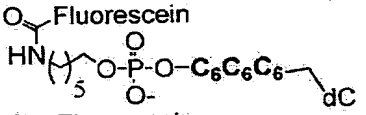
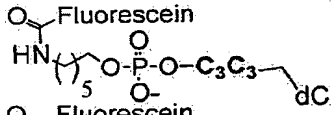
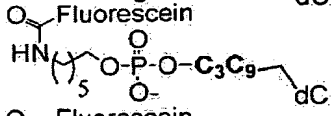
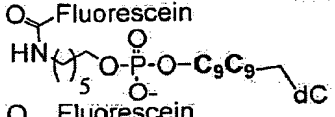
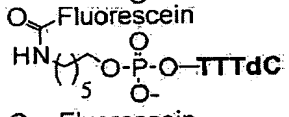
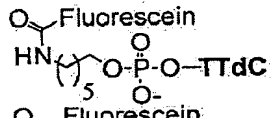
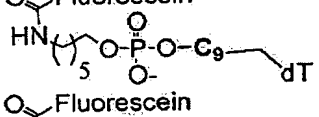
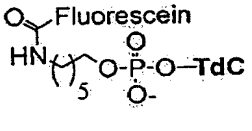
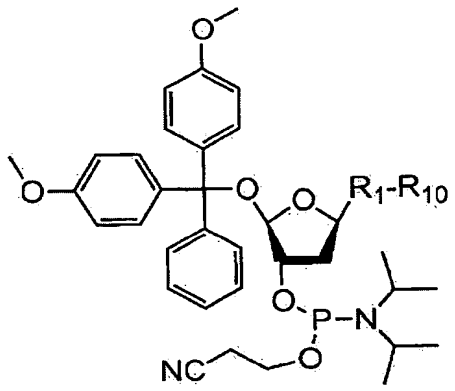
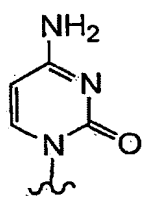
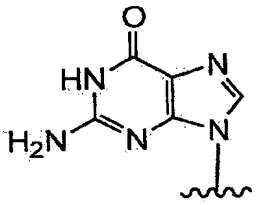
e-tag Reporter	Charge	Elution Time, min
	-8	12.1*
	-9	12.7
	-8	12.8
	-7	13.1
	-6	13.0
	-6	13.4
	-5	12.8*
	-5	13.2*
	-5	14.8
	-6	17.3
	-5	17.0
	-4	15.2*
	-4	16.5

Fig. 6

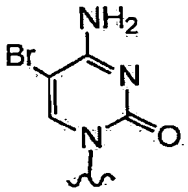




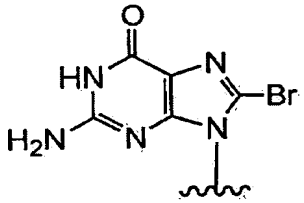
227



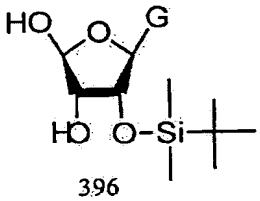
267



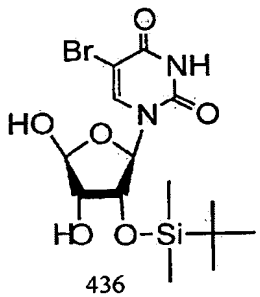
306



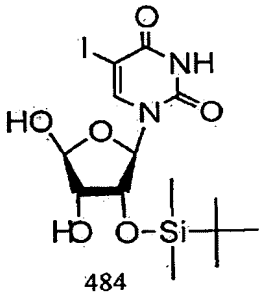
346



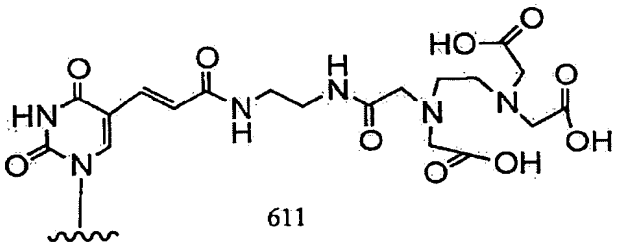
396



436



484



611

Fig. 7

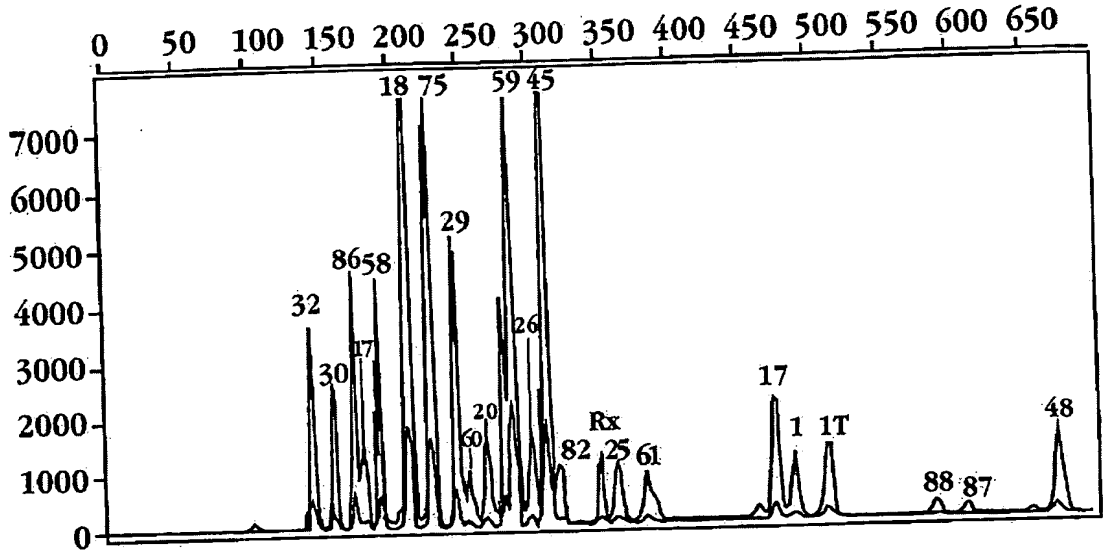

0 50 100 150 200 250 300 350 400 450 500 550 600 650
7000
6000
5000
4000
3000
2000
1000
0
18 75 59 45
29
86 58
32
17
30
26
20
60
82
Rx
25
61
17
1
1T
48
88
87

Fig. 8

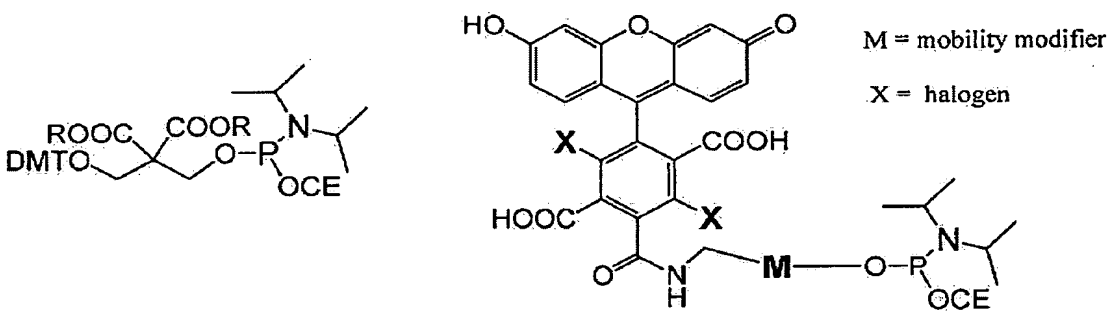
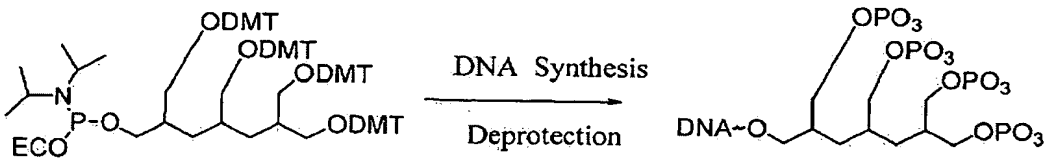

ROOC
COOR
DMTO
O
P
N
OCE
HO
O
O
X
COOH
HOOC
X
O
N
H
M
O
P
N
OCE
M = mobility modifier
X = halogen

Fig. 9



(9 negative charges per coupling)

Fig. 10

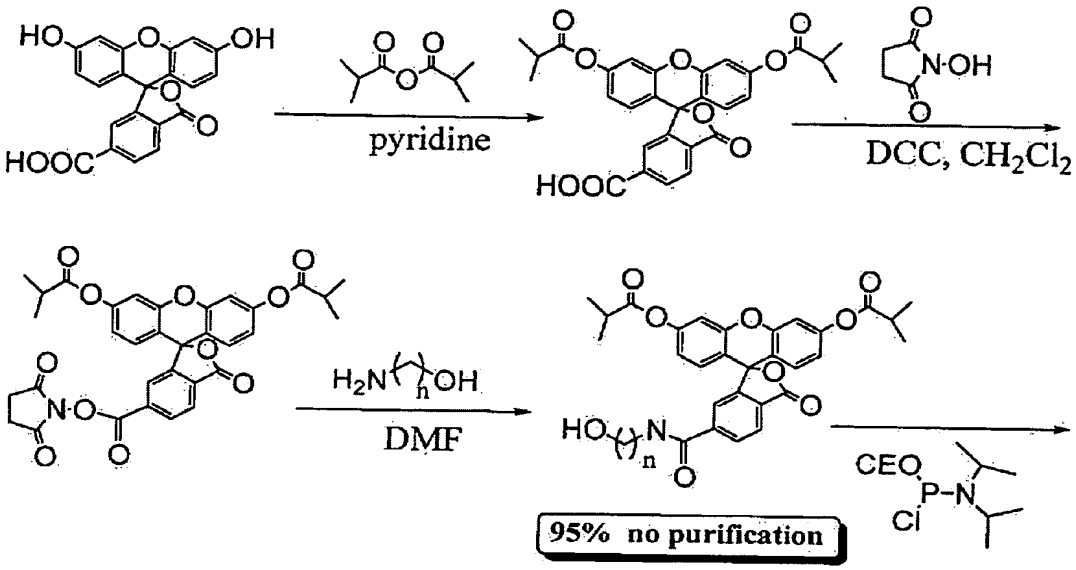

HO
OH
HOOC
pyridine
HOOC
N·OH
DCC, CH_2Cl_2
$H_2N(CH_2)_nOH$
DMF
HO(CH2)nN
95% no purification
CEO
P-N
Cl

Fig. 11

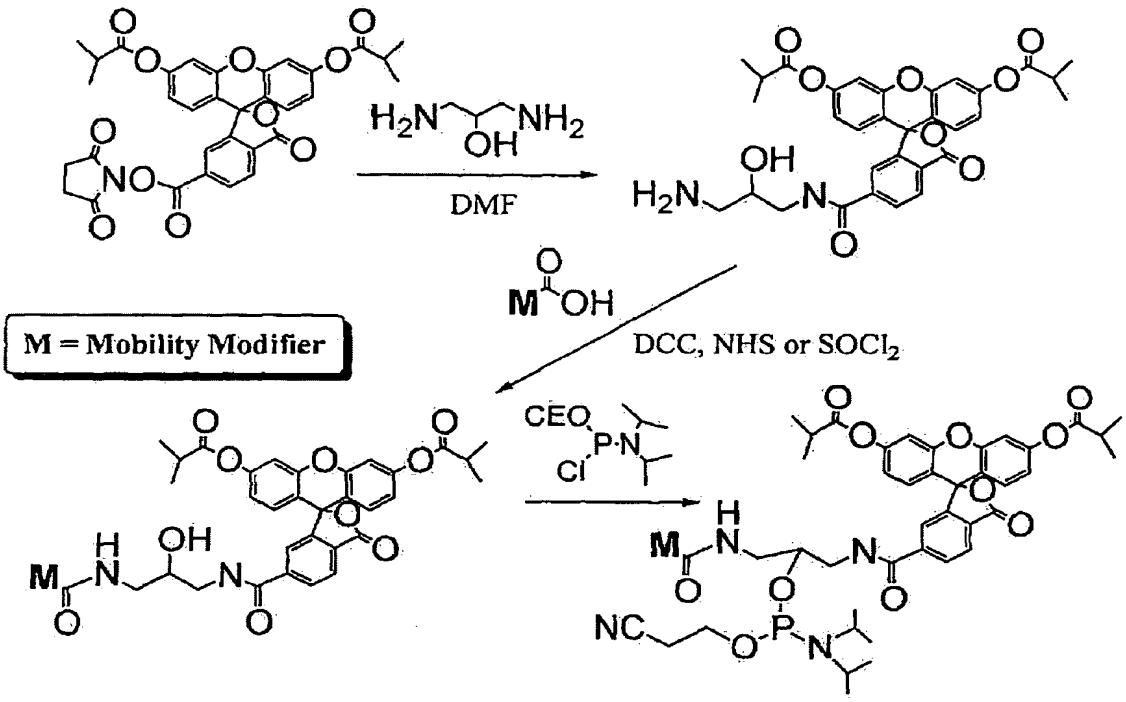


Fig. 12

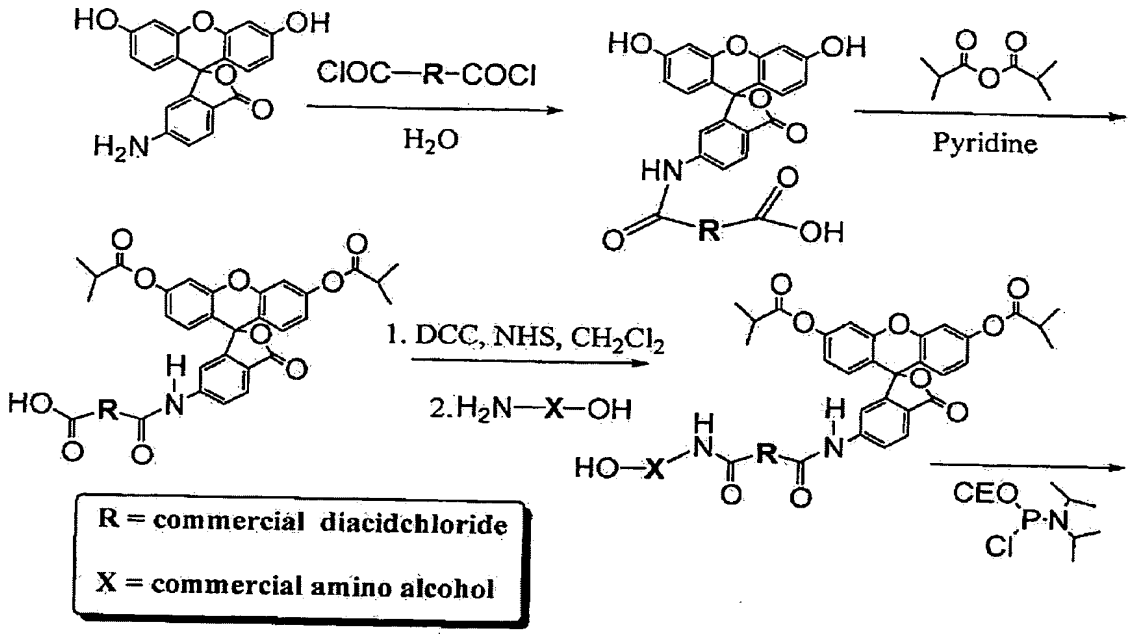

ClOC—R-COCl
H_2O
Pyridine
1. DCC, NHS, CH_2Cl_2
2. H_2N—X—OH
R = commercial diacidchloride
X = commercial amino alcohol

Fig. 13

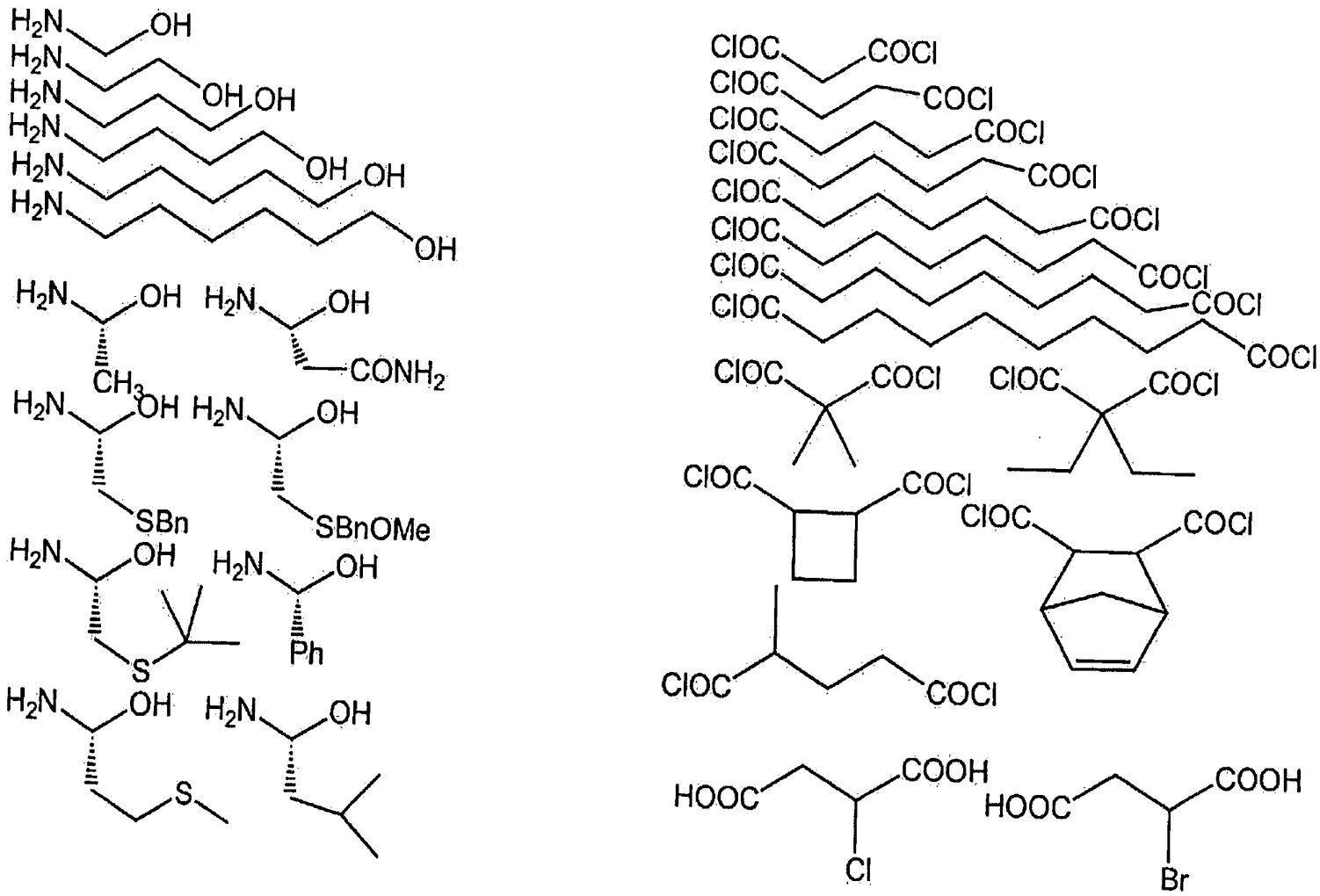

H2N OH
H2N OH OH
H2N OH OH
H2N OH OH
H2N OH
H2N OH H2N OH CONH2
CH3
H2N OH H2N OH
SBn SBnOMe
H2N OH H2N OH
Ph
S
H2N OH H2N OH
S
ClOC COCl
ClOC COCl
ClOC COCl
ClOC COCl
ClOC COCl
ClOC COCl
ClOC COCl
ClOC COCl
ClOC COCl ClOC COCl
ClOC COCl
ClOC COCl
ClOC COCl
HOOC COOH
Cl
HOOC COOH
Br

Fig. 14

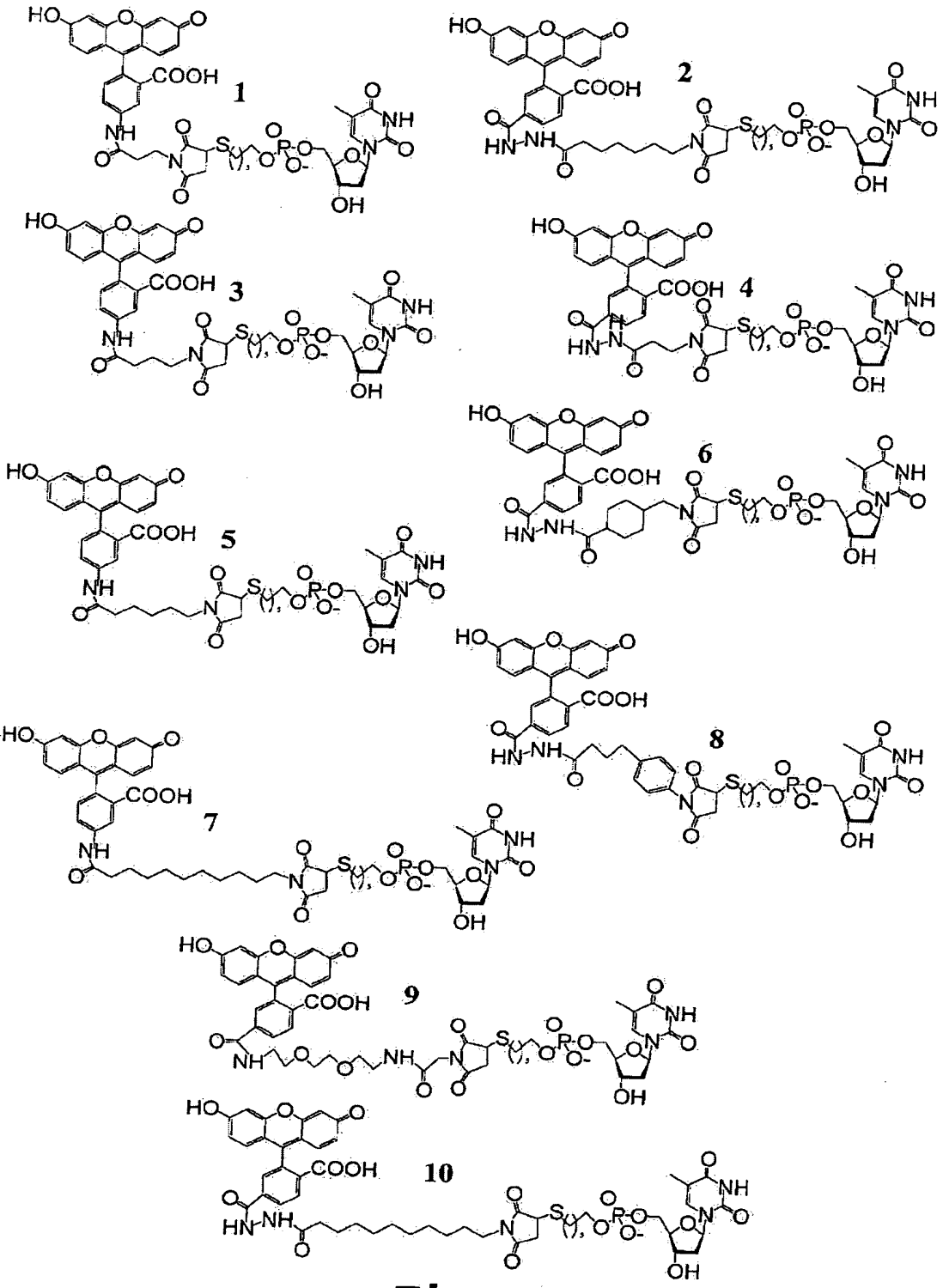


Fig. 15

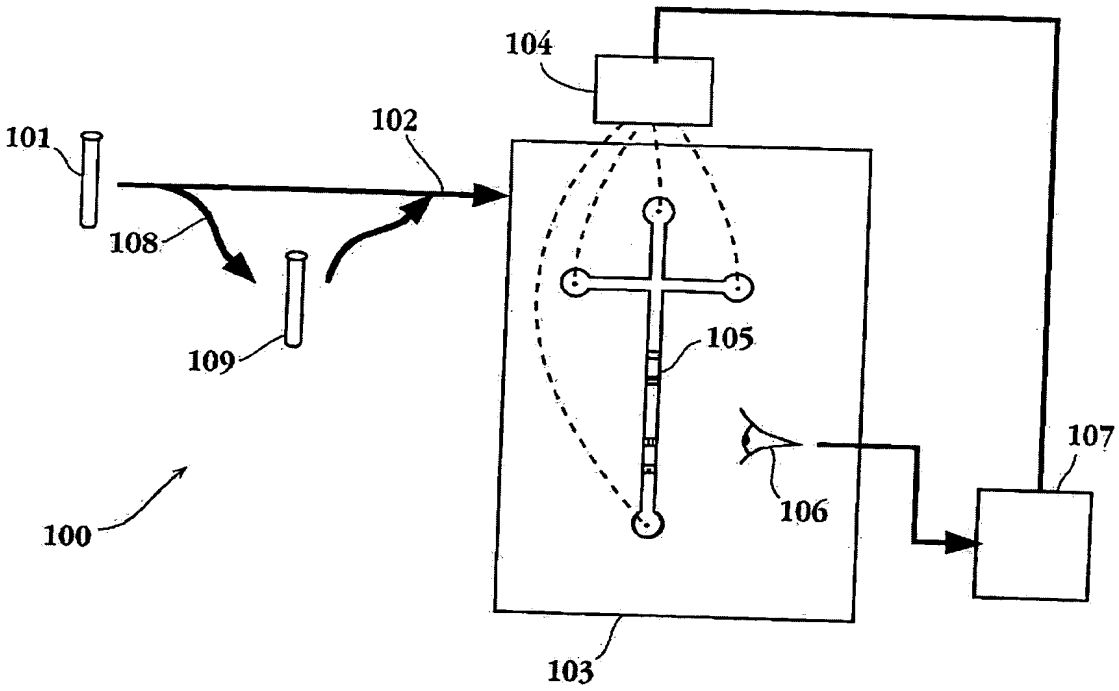
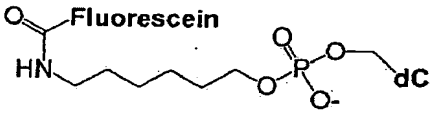
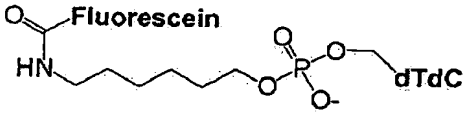


Fig. 16

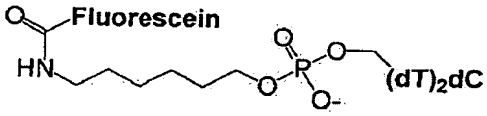
ACLA001



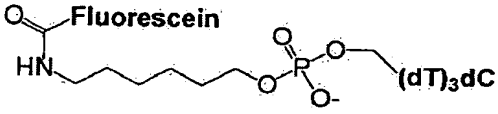
ACLA002



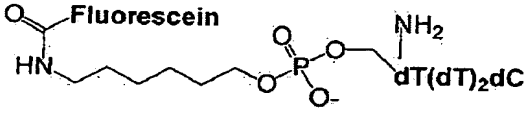
ACLA003



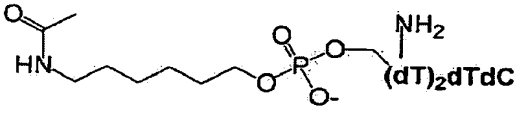
ACLA004



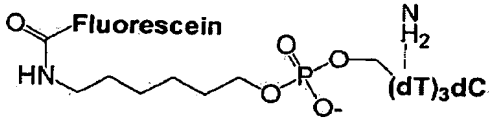
ACLA005



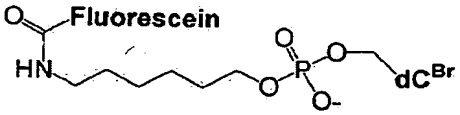
ACLA006



ACLA007



ACLA008



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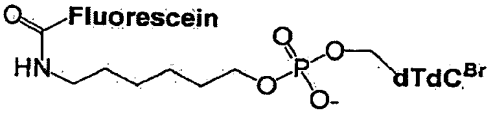

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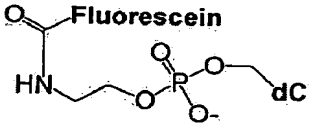

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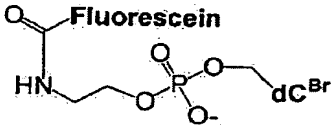

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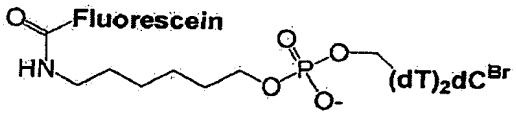

Fig. 17A

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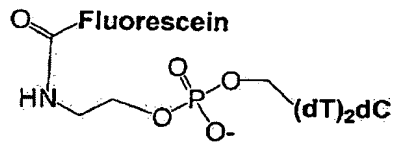

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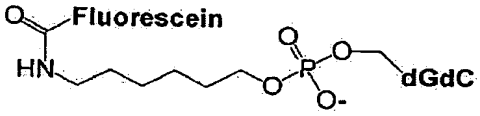

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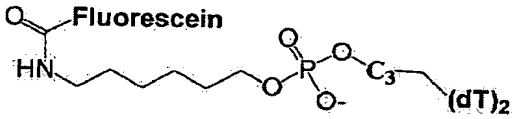

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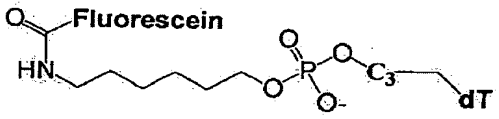

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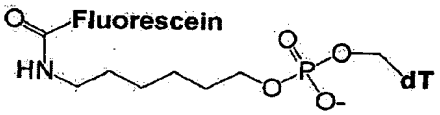

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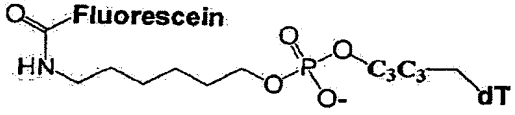

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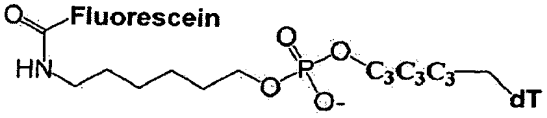

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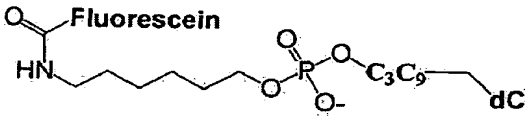

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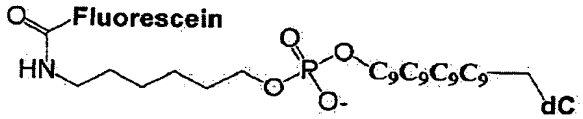

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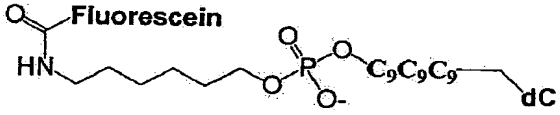

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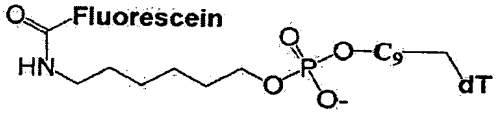

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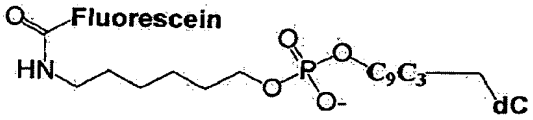

Fig. 17B

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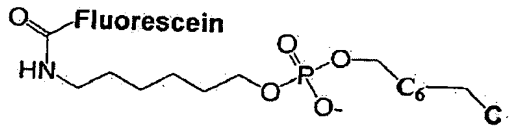

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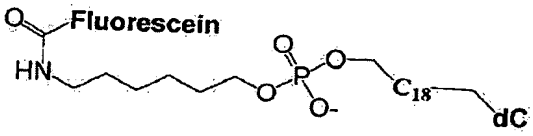

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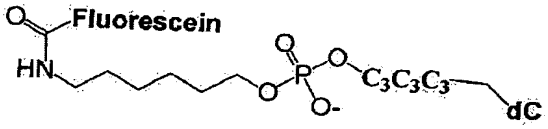

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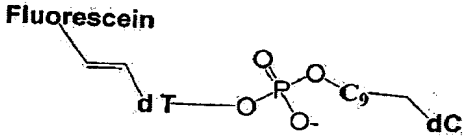

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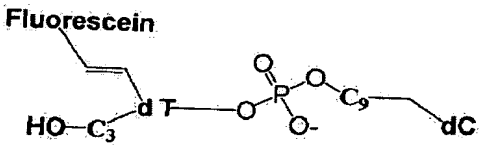

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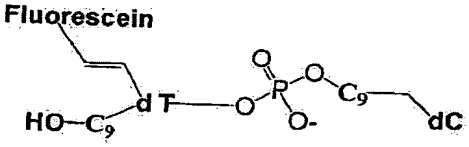

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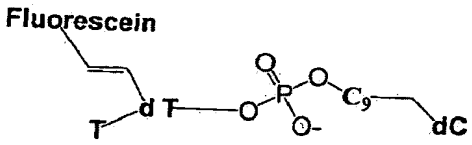

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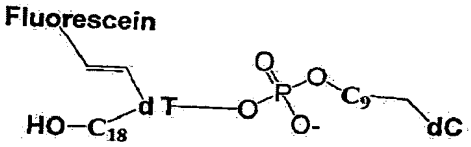

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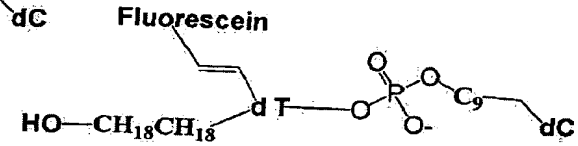

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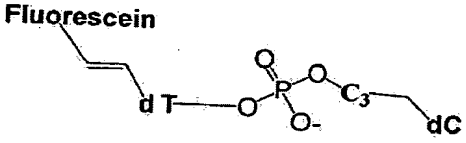

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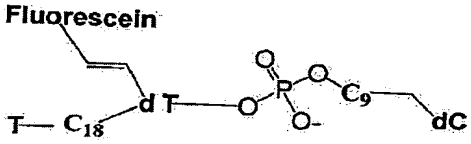

Fig. 17D

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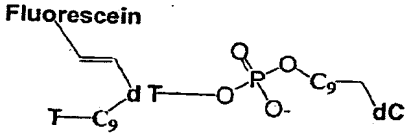

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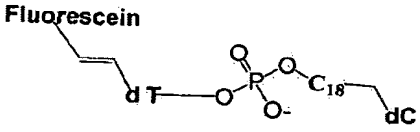

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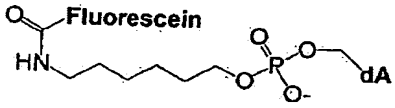

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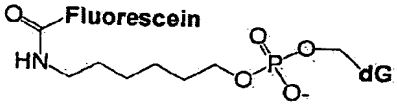

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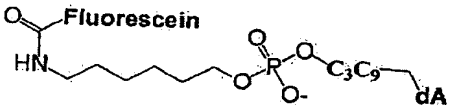

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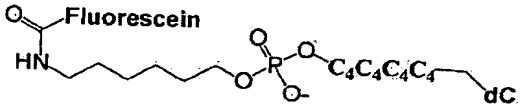

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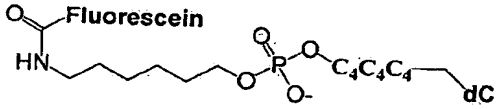

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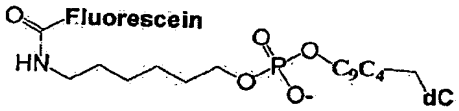

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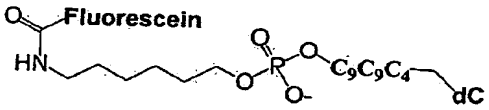

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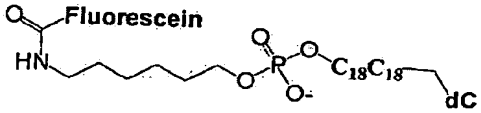

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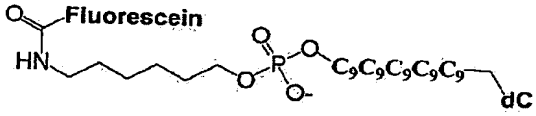

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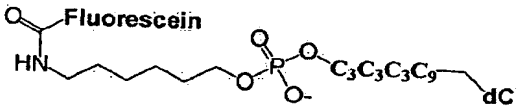

Fig. 17E

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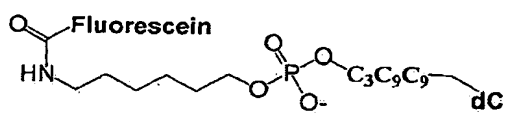

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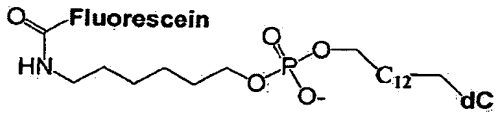

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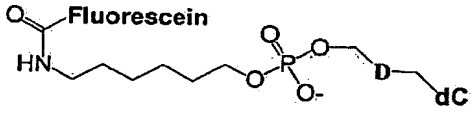

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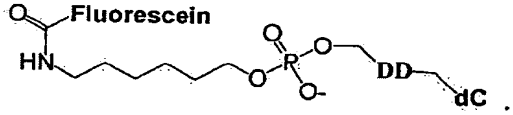

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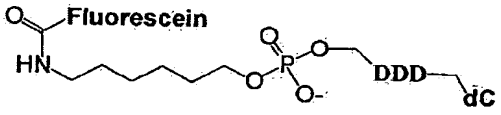

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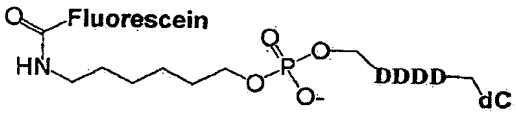

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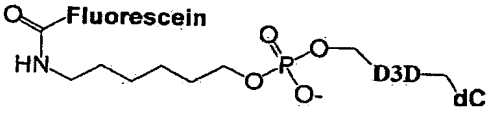

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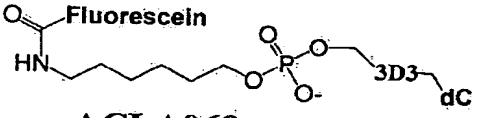

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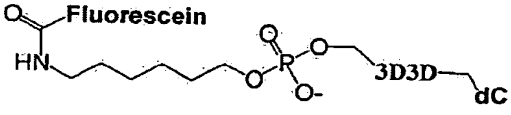

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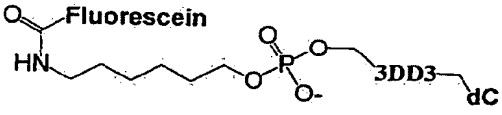

Fig. 17F

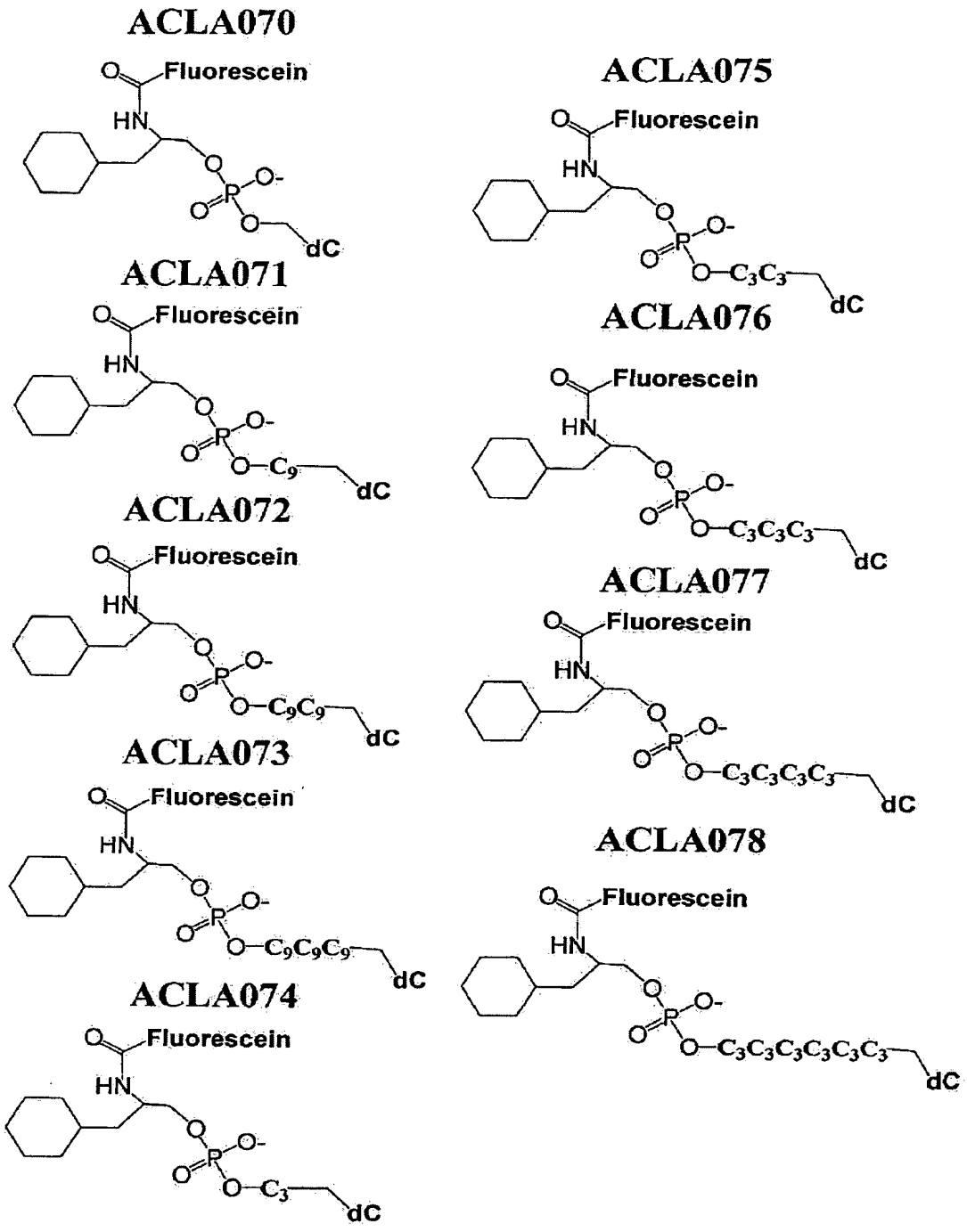
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Fig. 17G

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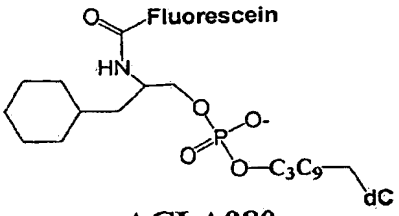

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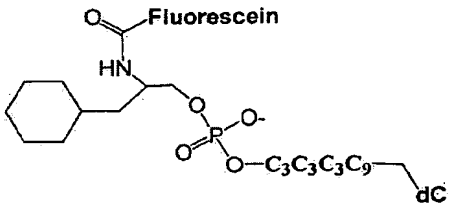

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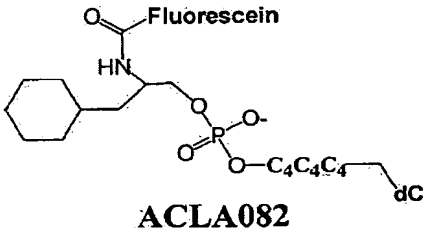

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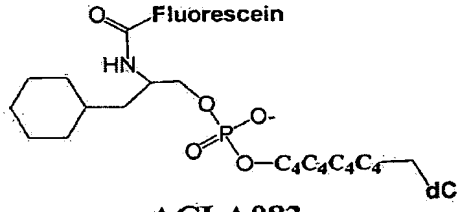

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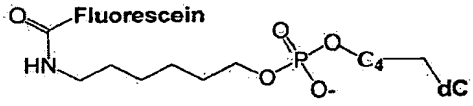

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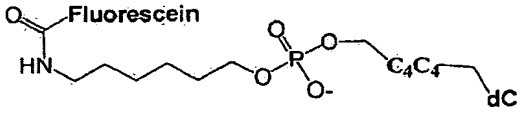
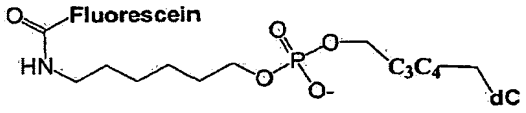
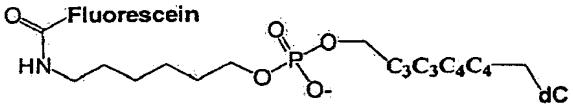


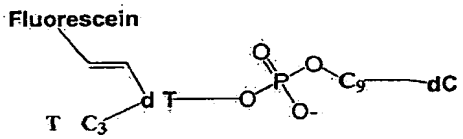
ACLA085



ACLA086



ACLA087



ACLA088

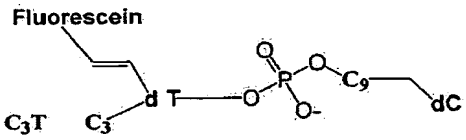
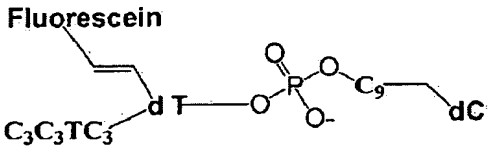
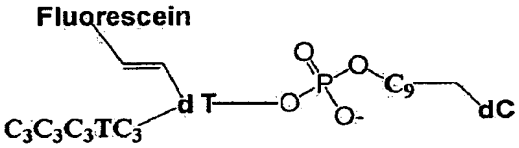


Fig. 17H

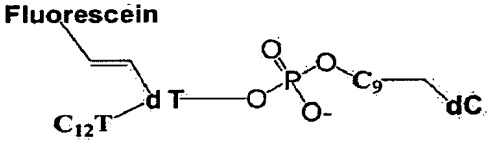
ACLA089



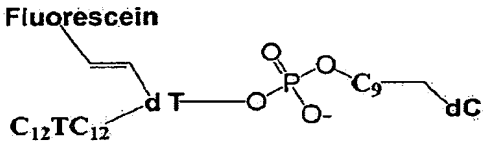
ACLA090



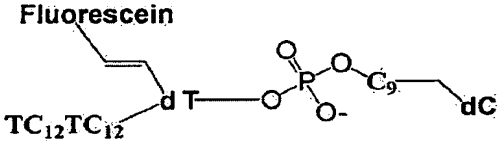
ACLA091



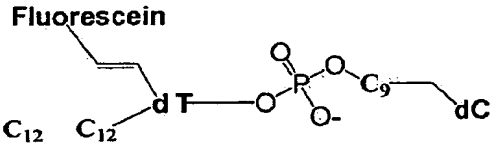
ACLA092



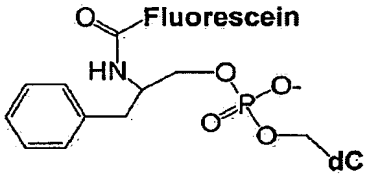
ACLA093



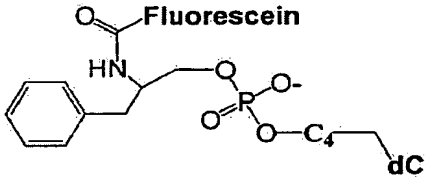
ACLA094



ACLA095



ACLA096



ACLA097

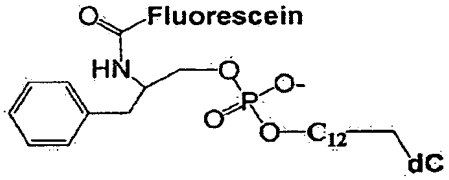


Fig. 17I

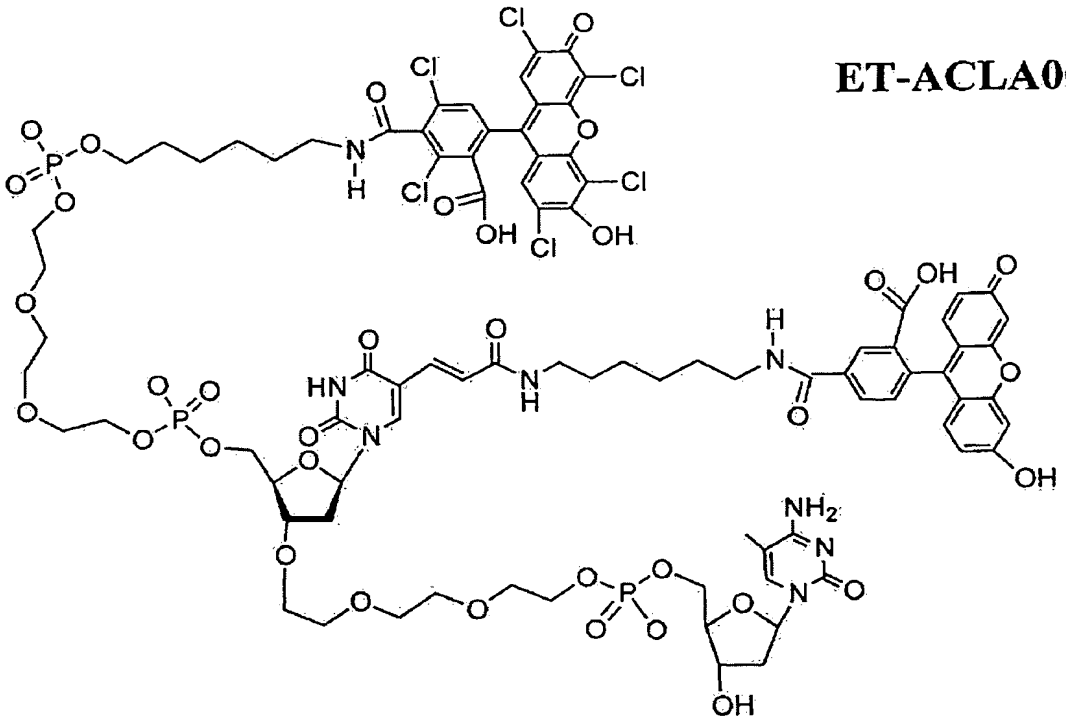


Fig. 17J

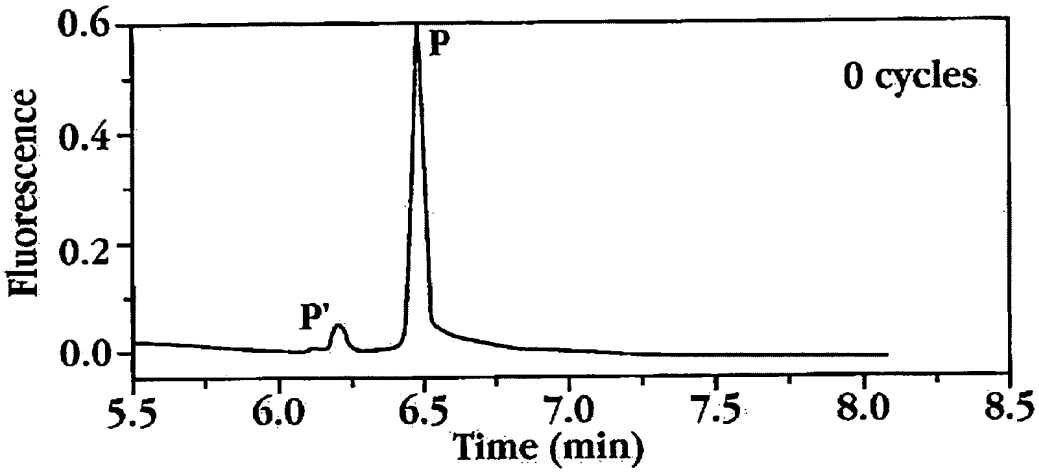


Fig. 18A

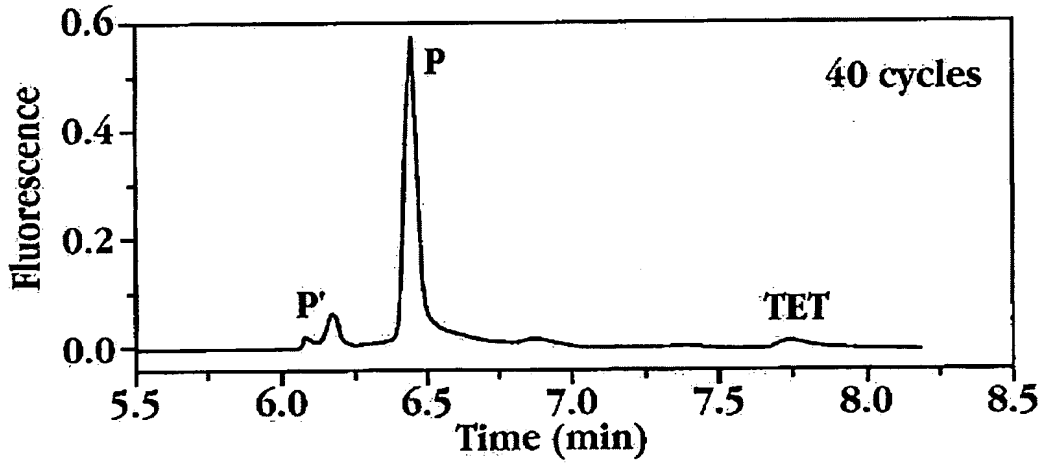


Fig. 18B

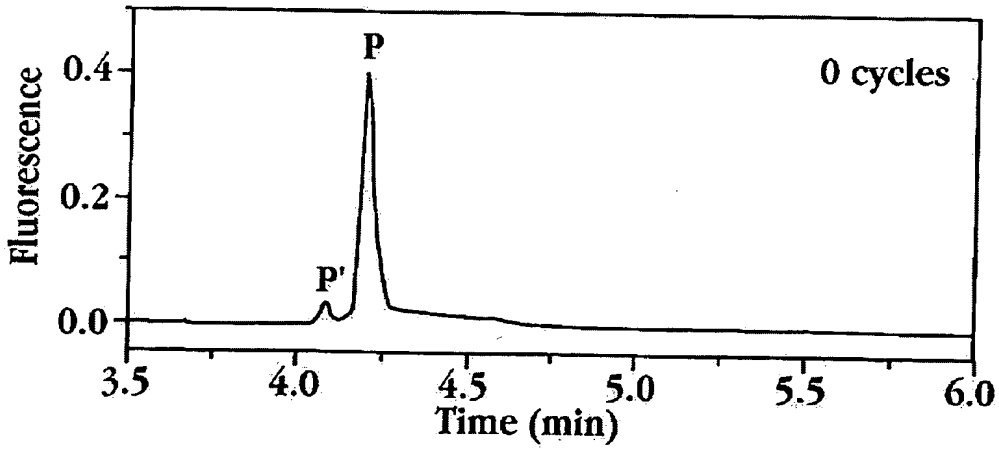


Fig. 19A

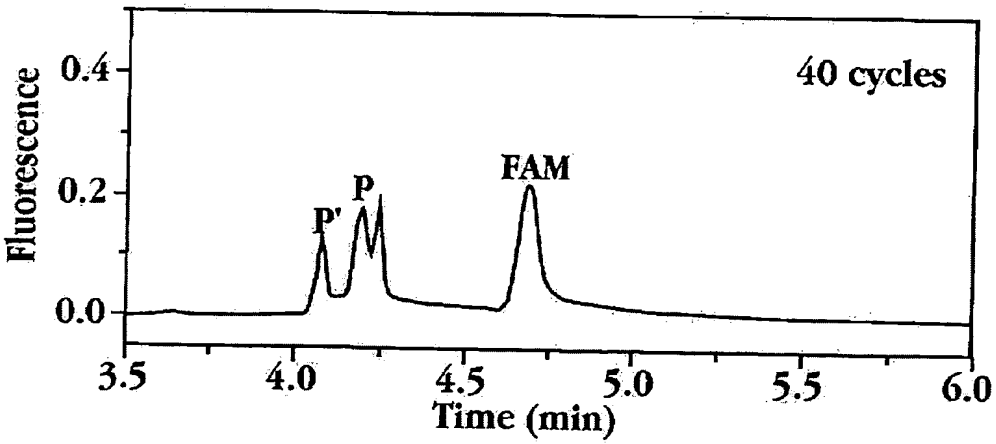


Fig. 19B

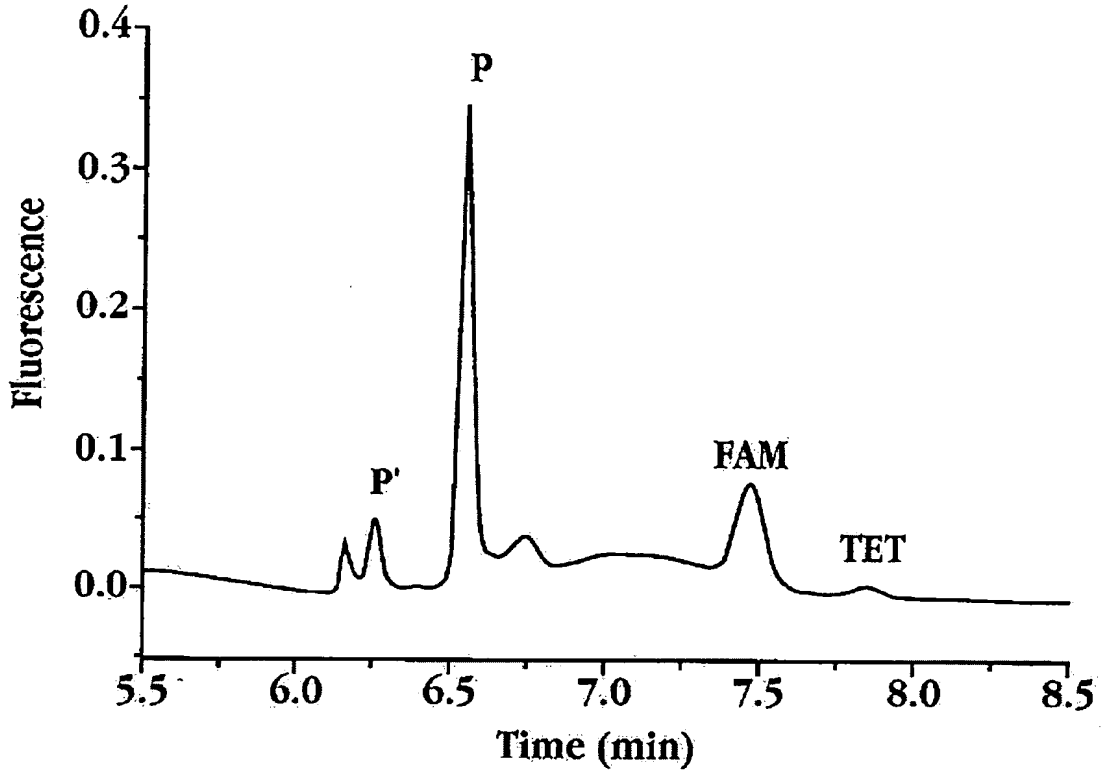

0.4
0.3
0.2
0.1
0.0
Fluorescence
P
P'
FAM
TET
5.5
6.0
6.5
7.0
7.5
8.0
8.5
Time (min)

Fig. 20

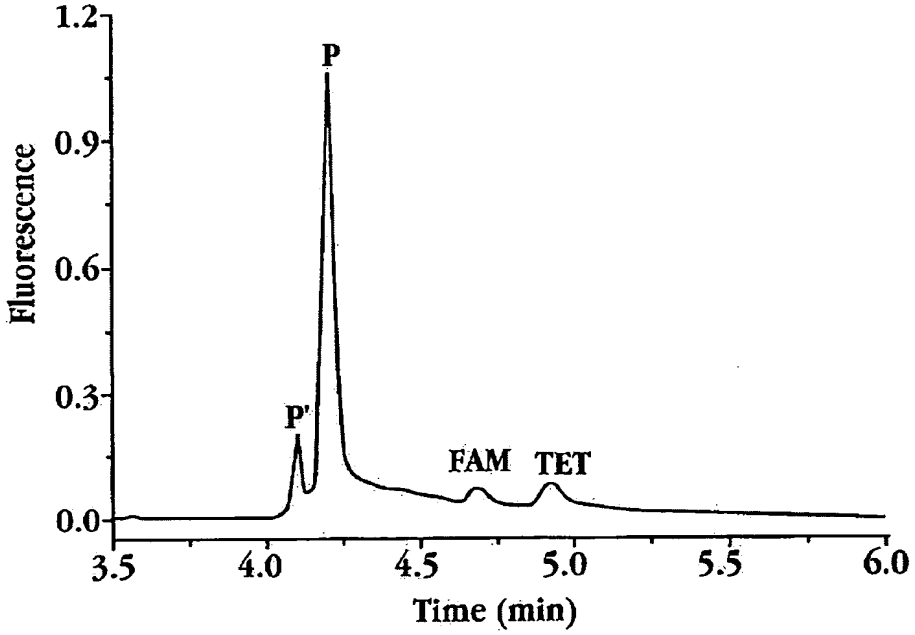

1.2
0.9
0.6
0.3
0.0
Fluorescence
P
P'
FAM
TET
3.5
4.0
4.5
5.0
5.5
6.0
Time (min)

Fig. 21

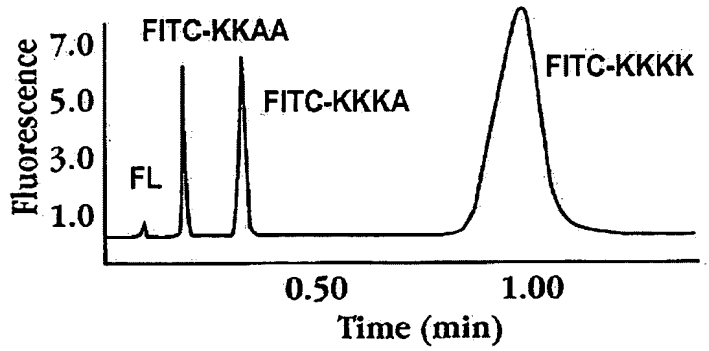

7.0
5.0
3.0
1.0
Fluorescence
FITC-KKAA
FITC-KKKA
FITC-KKKK
FL
0.50
1.00
Time (min)

Fig. 22

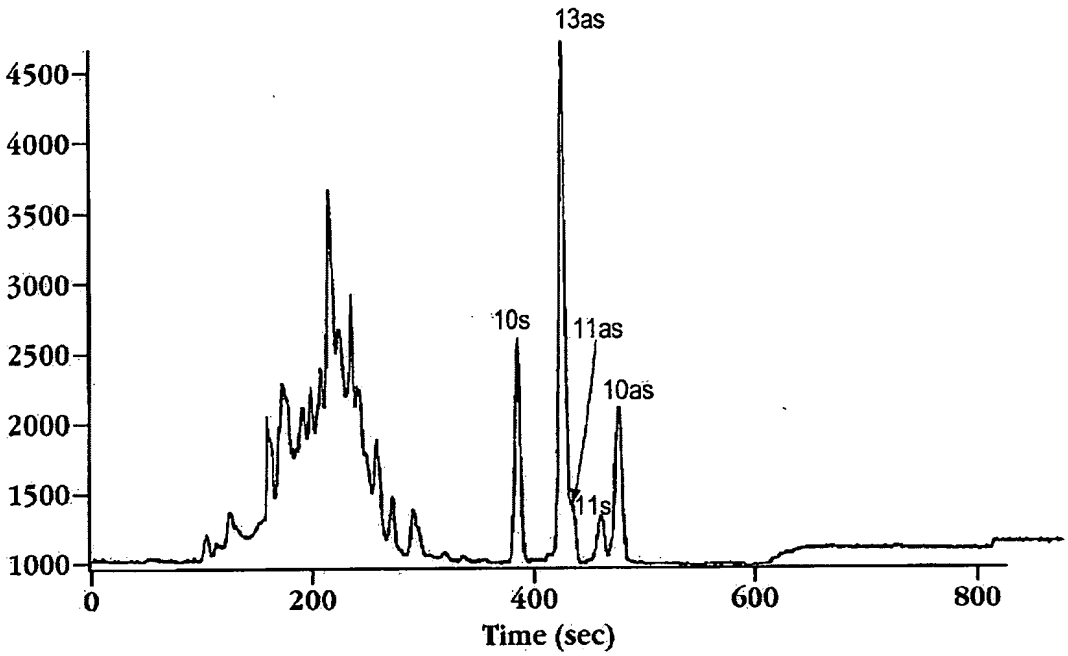


Fig. 23A

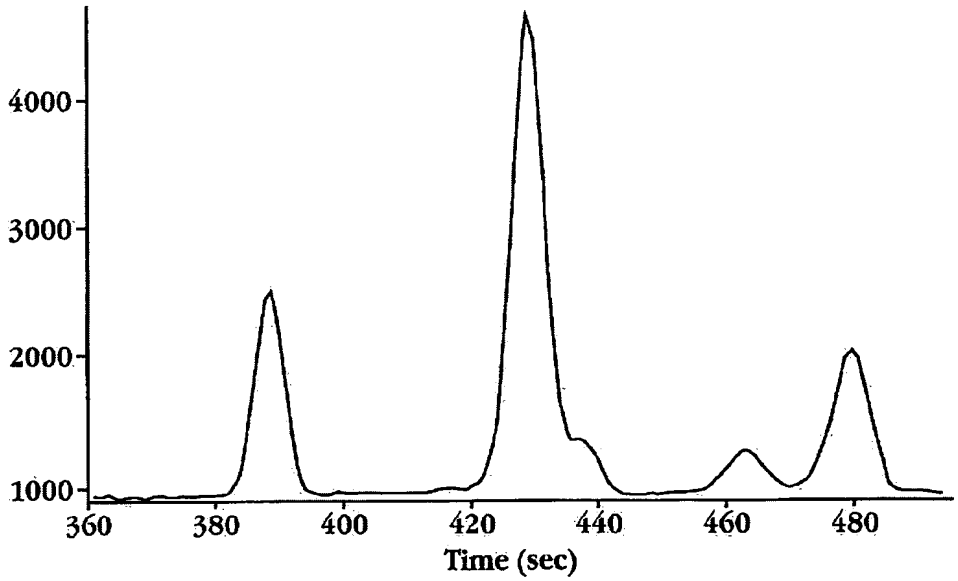


Fig. 23B

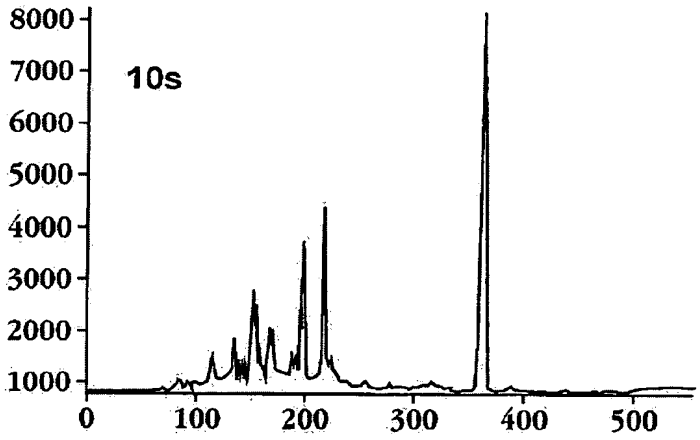


Fig. 23C

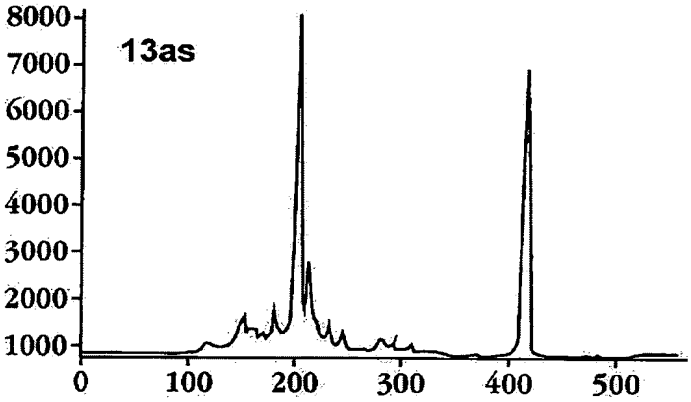


Fig. 23D

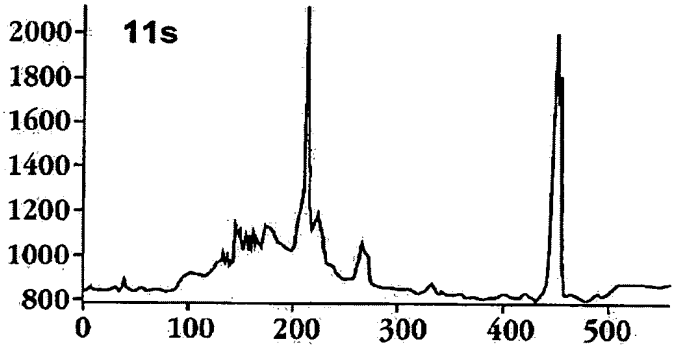


Fig. 23E

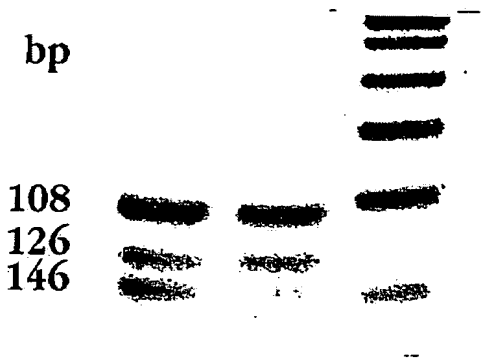


Fig. 23F

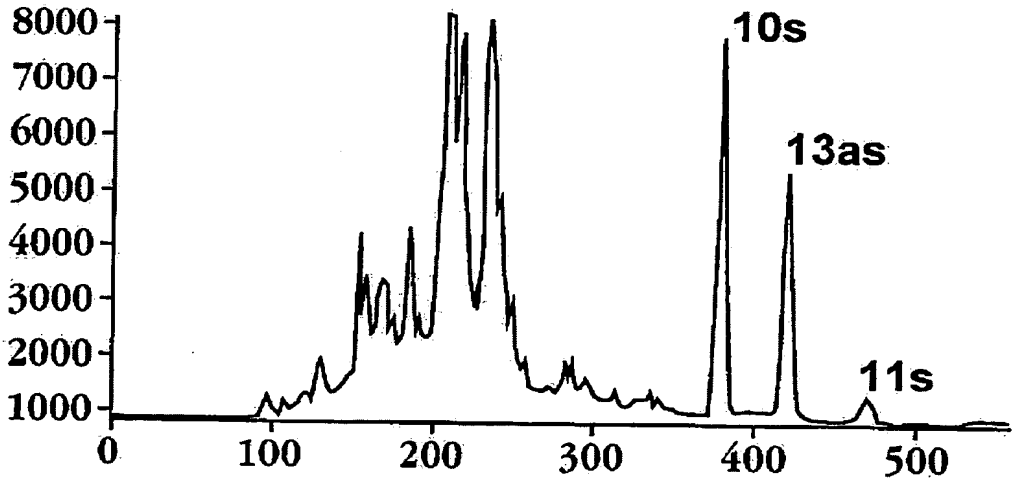


Fig. 23G

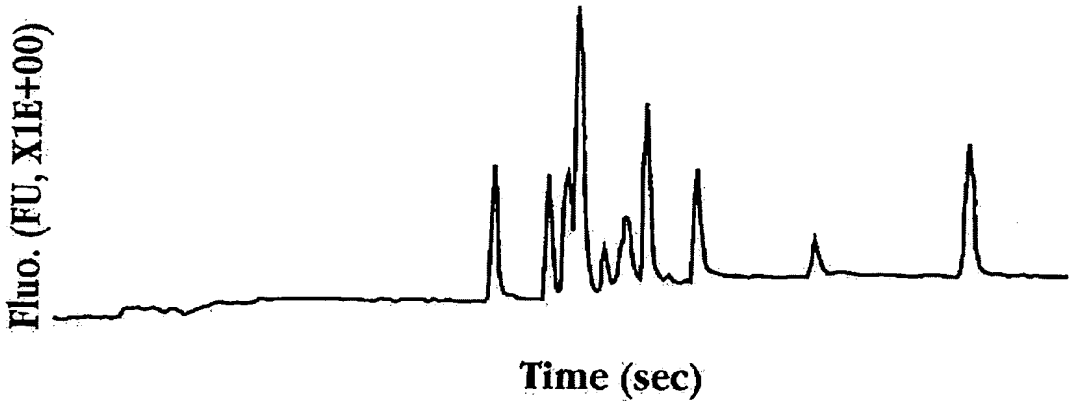


Fig. 24

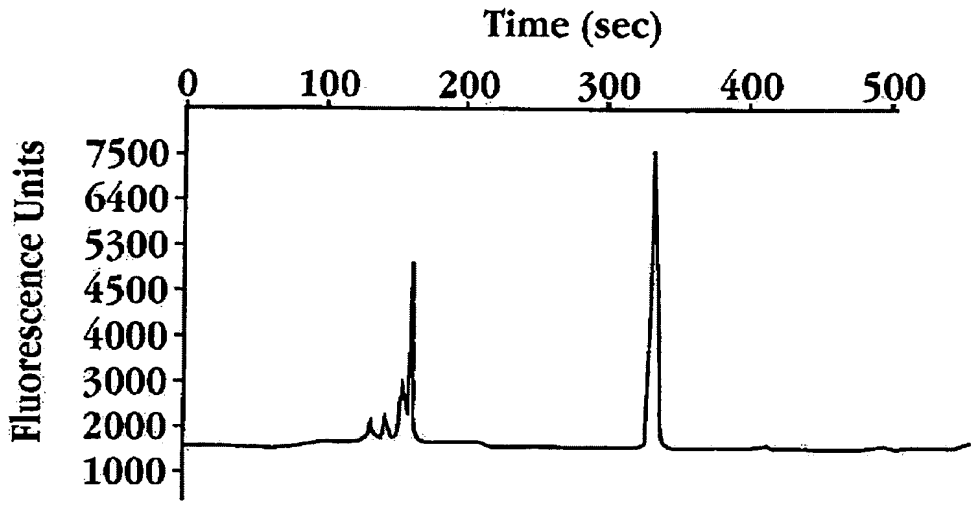


Fig. 25A

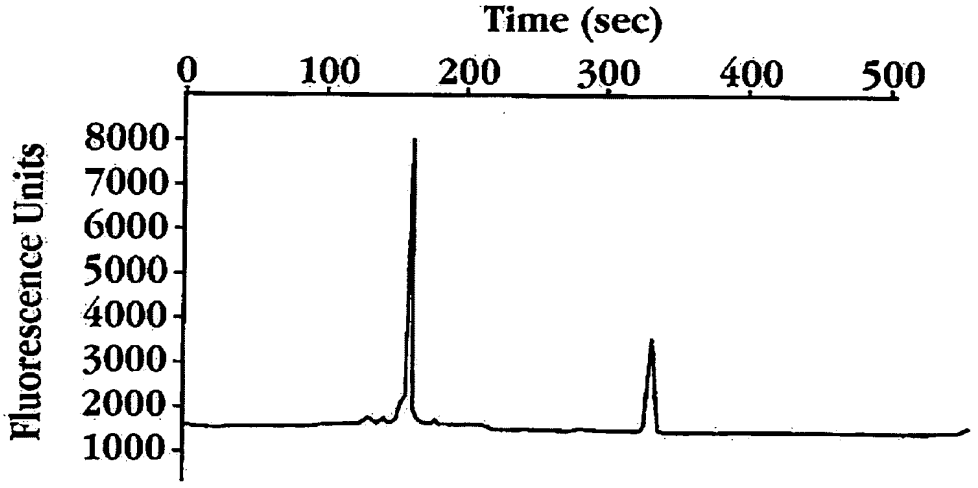


Fig. 25B

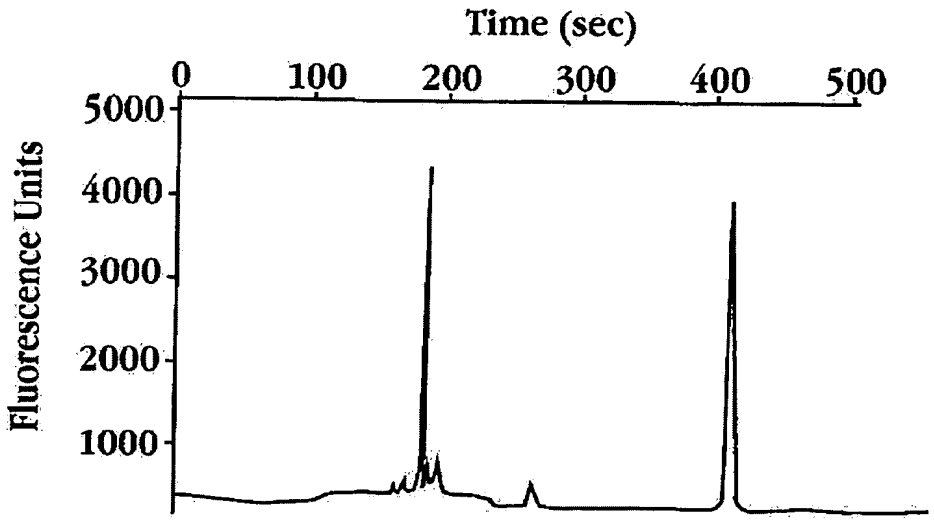


Fig. 25C

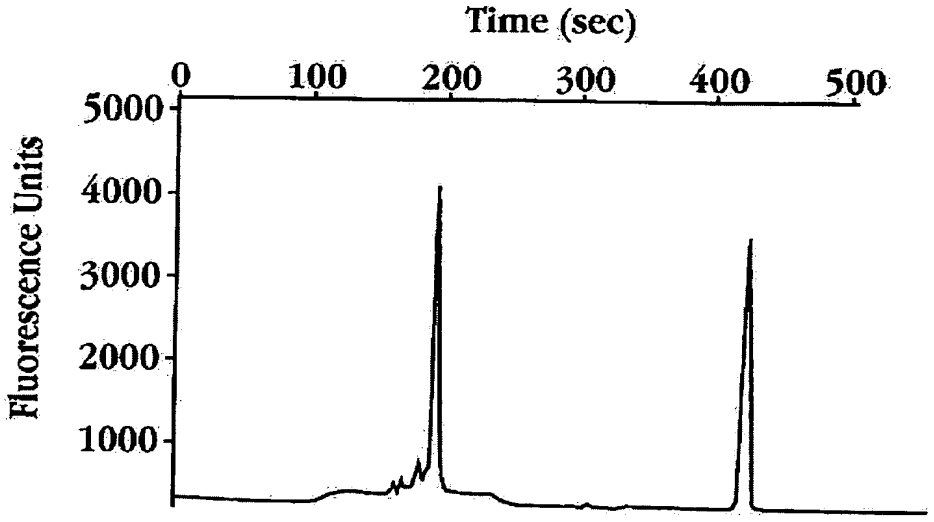


Fig. 25D

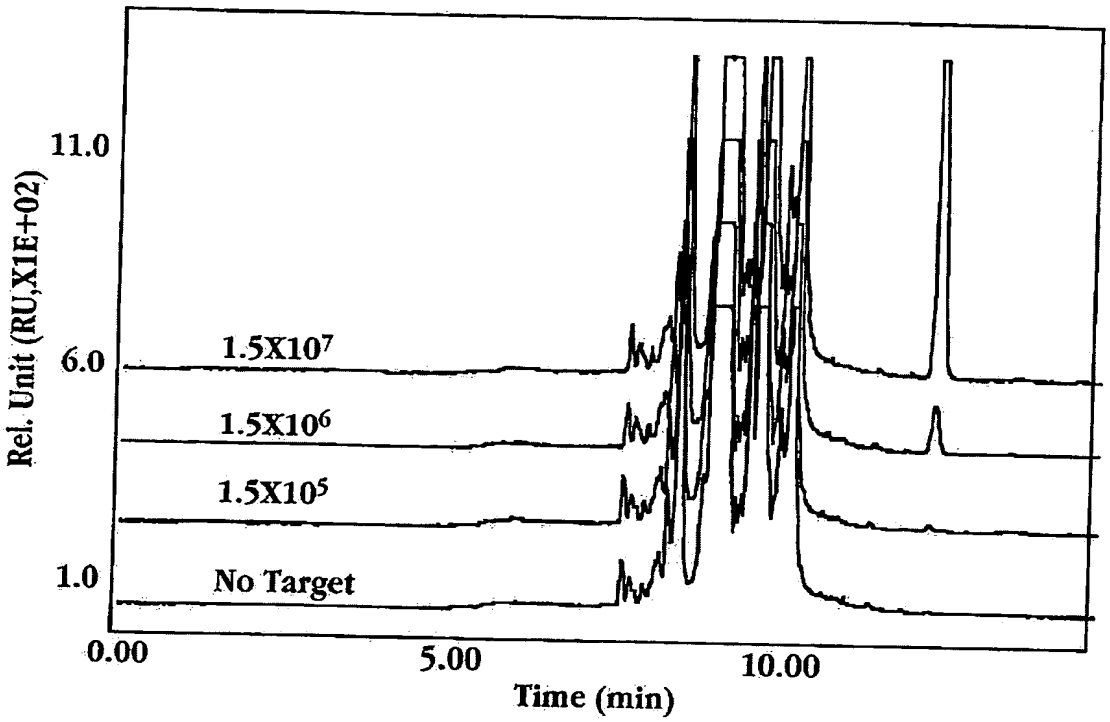

11.0
6.0
1.0
Rel. Unit (RU,X1E+02)
1.5X10^7
1.5X10^6
1.5X10^5
No Target
0.00
5.00
10.00
Time (min)

Fig. 26

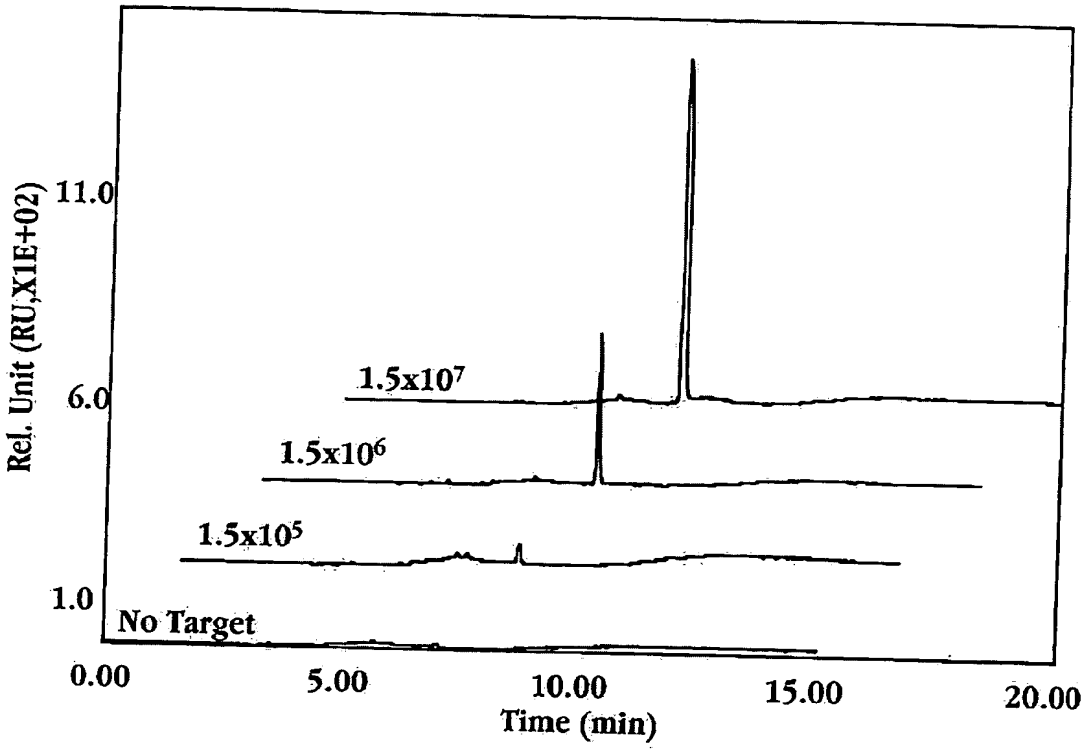

Rel. Unit (RU,X1E+02)
11.0
6.0
1.0
1.5x10^7
1.5x10^6
1.5x10^5
No Target
0.00
5.00
10.00
15.00
20.00
Time (min)

Fig. 27

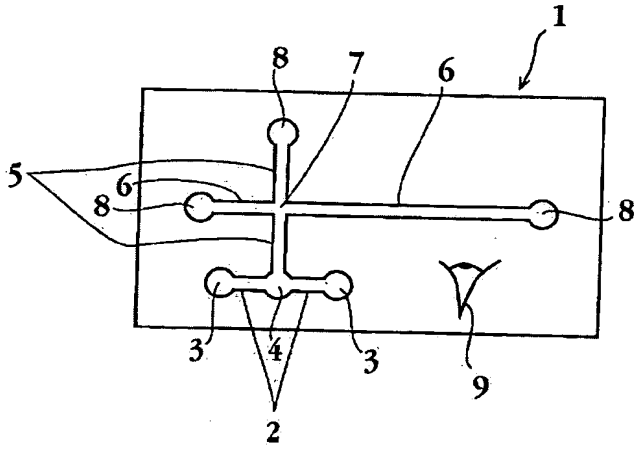


Fig. 28A

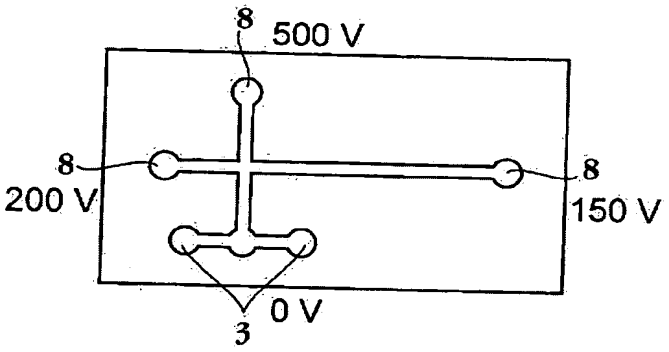


Fig. 28B

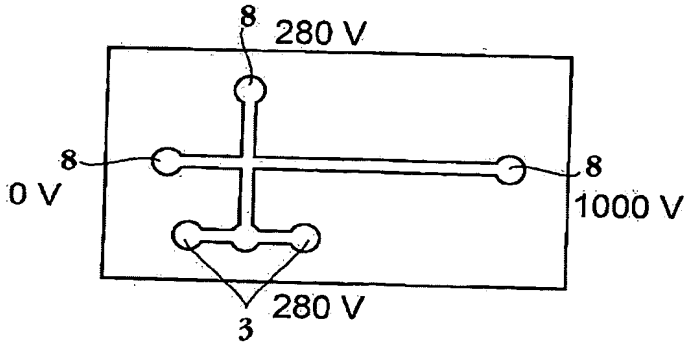


Fig. 28C

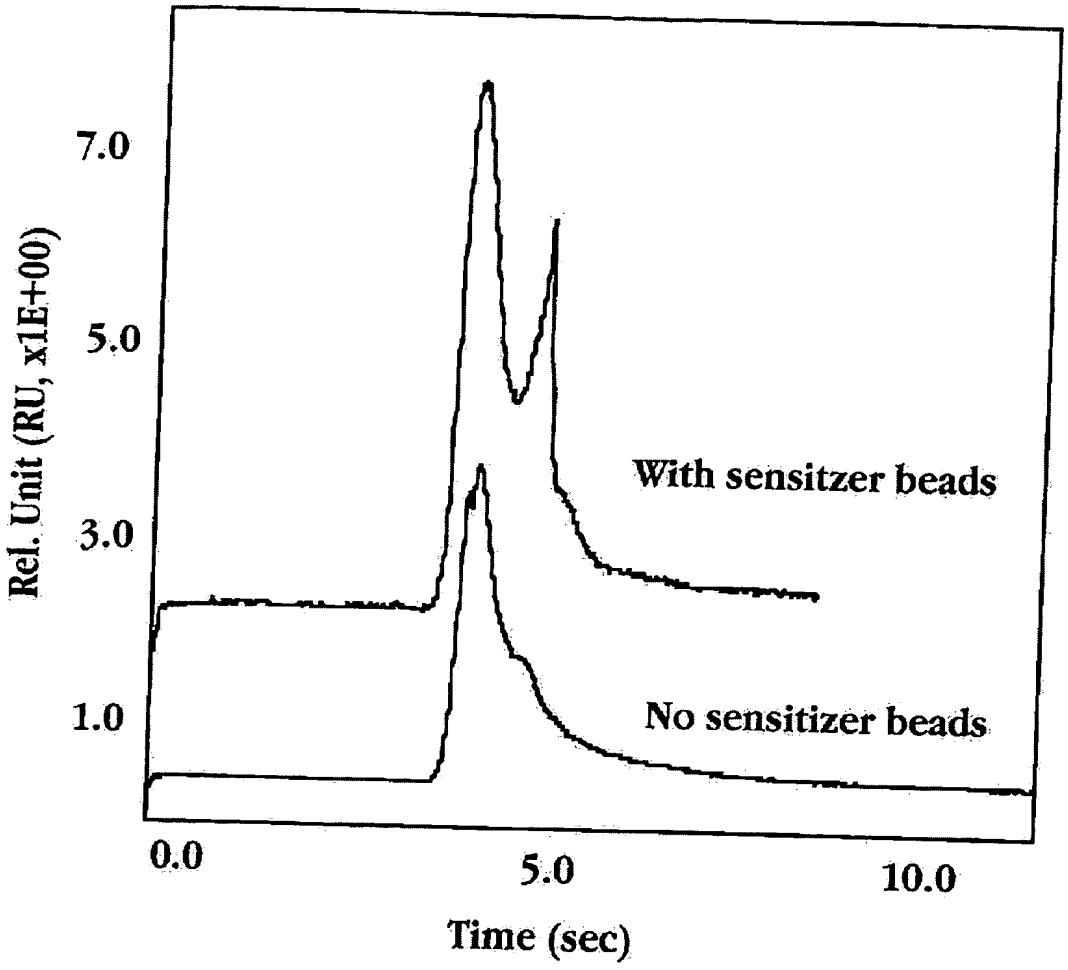

7.0
5.0
3.0
1.0
Rel. Unit (RU, x1E+00)
With sensitzer beads
No sensitizer beads
0.0
5.0
10.0
Time (sec)

Fig. 29

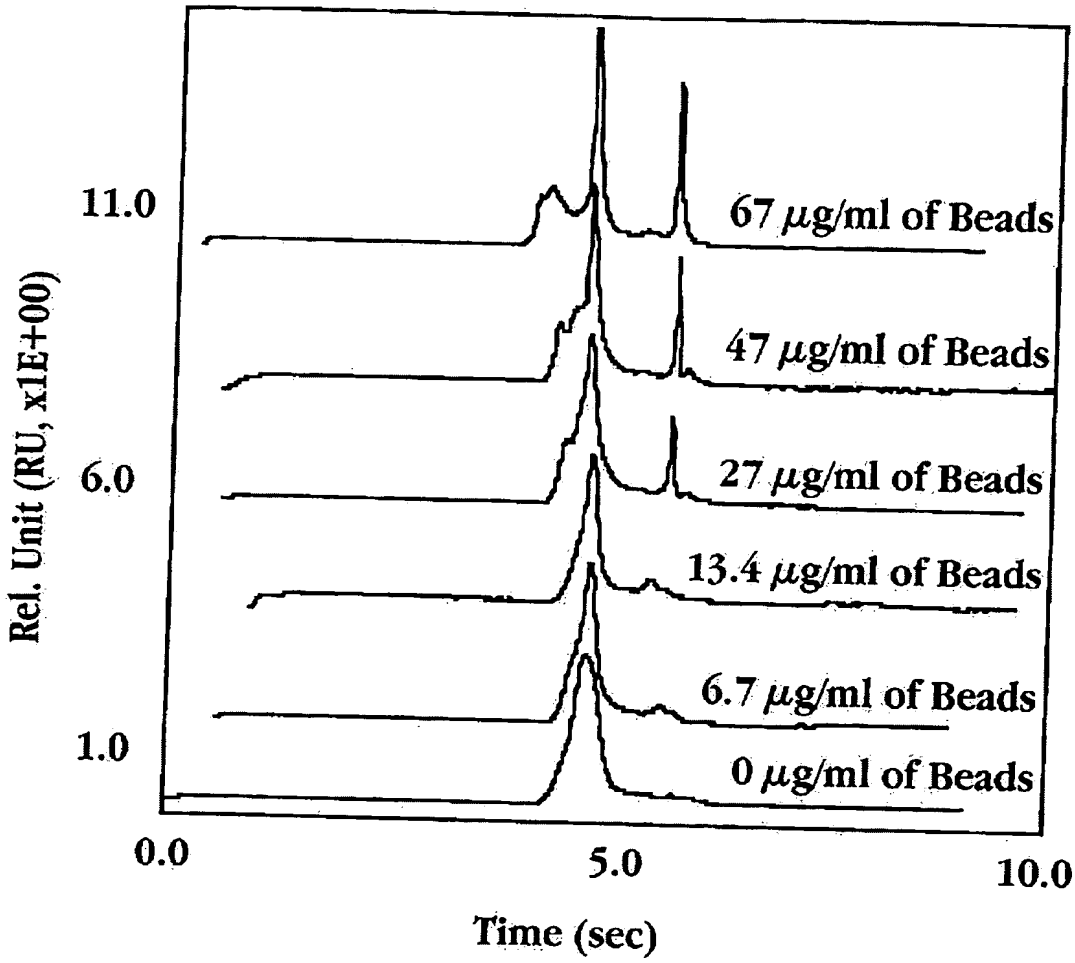

11.0
6.0
1.0
Rel. Unit (RU, x1E+00)
67 μg/ml of Beads
47 μg/ml of Beads
27 μg/ml of Beads
13.4 μg/ml of Beads
6.7 μg/ml of Beads
0 μg/ml of Beads
0.0
5.0
10.0
Time (sec)

Fig. 30

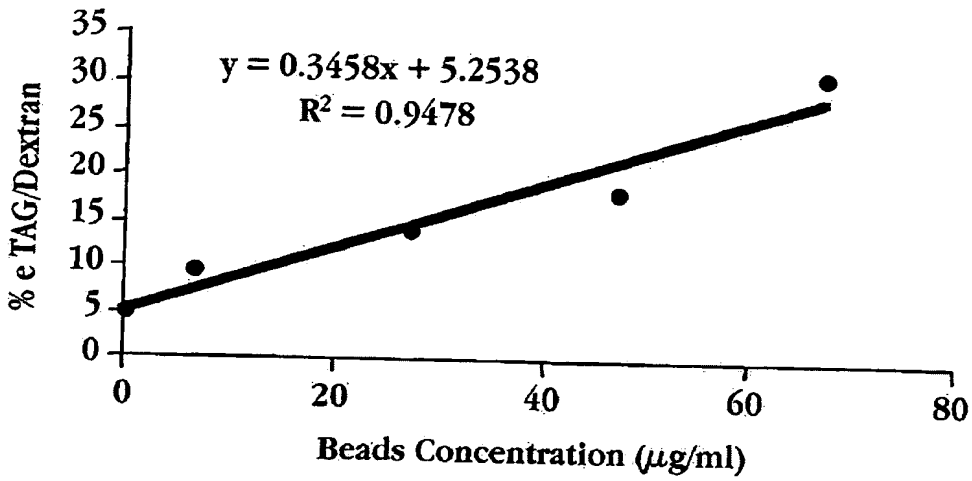

y = 0.3458x + 5.2538
R² = 0.9478
% e TAG/Dextran
Beads Concentration (μg/ml)
0
5
10
15
20
25
30
35
0
20
40
60
80

Fig. 31

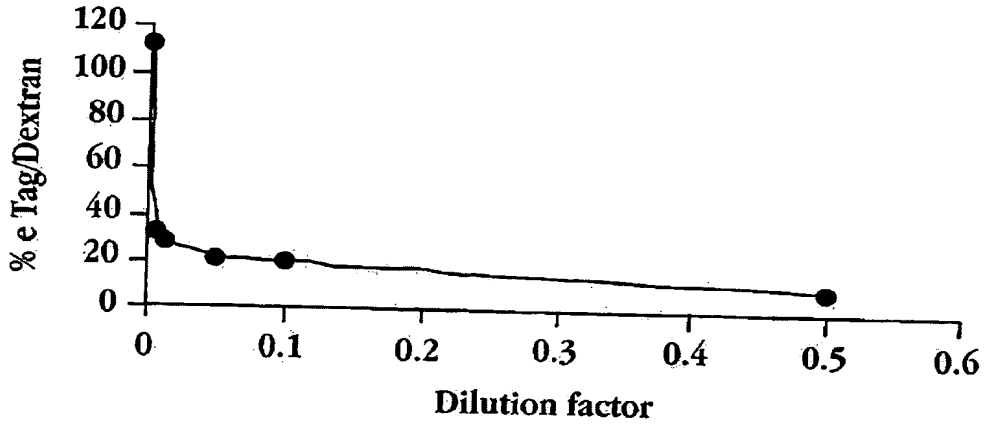

% e Tag/Dextran
Dilution factor
0
20
40
60
80
100
120
0
0.1
0.2
0.3
0.4
0.5
0.6

Fig. 32

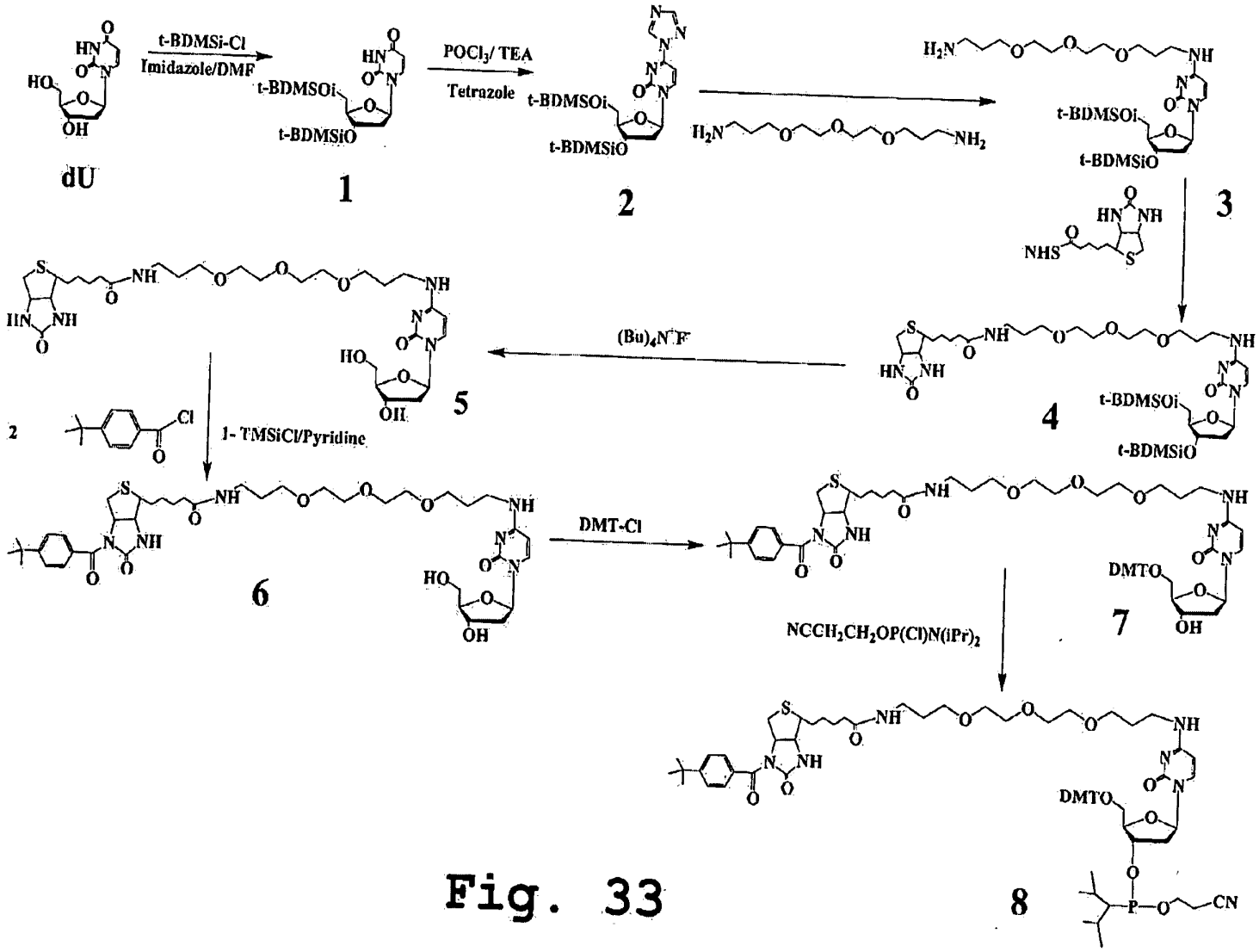

t-BDMSi-Cl
Imidazole/DMF
POCl3/ TEA
Tetrazole
dU
1
2
3
4
5
6
7
8
(Bu)4N F
1- TMSiCl/Pyridine
DMT-Cl
NCCH2CH2OP(Cl)N(iPr)2
t-BDMSOi
t-BDMSiO
DMTO
CN

Fig. 33

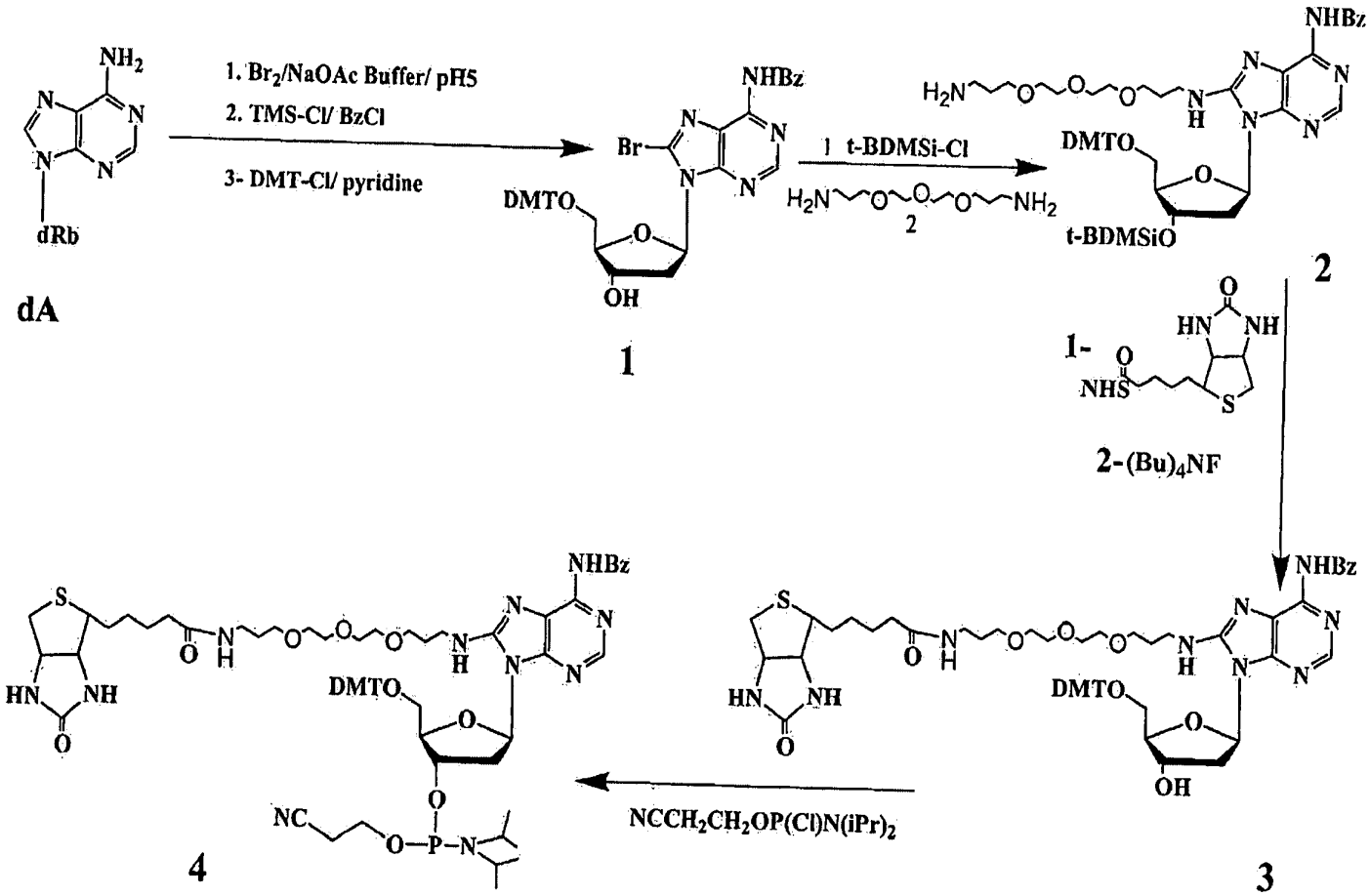

1. Br2/NaOAc Buffer/ pH5
2. TMS-Cl/ BzCl
3- DMT-Cl/ pyridine
dA
1
1 t-BDMSi-Cl
2
t-BDMSiO
2
1-
2-(Bu)4NF
NCCH2CH2OP(Cl)N(iPr)2
3
4

Fig. 34